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CORPORATE DEBT: A PERSPECTIVE ON LEVERAGE

MARCH 1991

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LETTER OF SUBMITTAL

January 31, 1991

Honorable Christopher J. Dodd
Chairman, Subcommittee on Securities
Committee on Banking, Housing, and Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

I am pleased to submit to you the report *Corporate Debt: A Perspective on Leverage*. The report examines the market for corporate bonds and includes statistical information on total debt, business indebtedness, and nonfinancial corporate debt; also included are relative measures of the corporate debt such as capitalization ratios. Current concerns about economic cycles are reviewed, and there are sections dealing with leveraged buyouts, industry differences, and foreign competition. The section on policy considerations provides information on the options involved in the taxation of corporate debt, and related questions. A glossary of terms is provided in an appendix.

The report was prepared in the Economics Division of CRS by Kevin F. Winch, Specialist in Economic Policy and Gary W. Shorter, Analyst in Business and Government Relations. Helpful suggestions during the preparation of the report were made by David L. Brumbaugh, Edward Knight, and Sylvia Morrison, also members of the Economics Division.

We hope the report will be useful to the Committee in its deliberations on legislation affecting financial markets and financial institutions.

Sincerely,

Joseph E. Ross

Joseph E. Ross
Director

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United States Senate

COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS

WASHINGTON, DC 20510–6075

May 1, 1991

The Honorable Donald W. Riegle, Jr.
Chairman
Committee on Banking, Housing and Urban Affairs
U.S. Senate, Washington, D.C.

Dear Mr. Chairman:

I am pleased to submit a report prepared by the Congressional Research Service of the Library of Congress entitled, "Corporate Debt: A Perspective on Leverage." The report was prepared at the request of Senator Heinz and myself, for the Subcommittee on Securities.

Our request was prompted by the concerns expressed by a number of our colleagues that the 1980s had seen a major increase in debt in virtually all sectors of the American economy: government, consumer, farm and corporate. We chose to inquire further on the specific issues within the jurisdiction of the Subcommittee on Securities, and we requested detailed information on the domestic corporate finance markets. Thus, this report examines (1) measures of corporate debt, (2) various causes and effects relating to the current trends, and (3) the major policy issues raised about the increase in corporate debt during the 1980s.

I believe this report merits wide circulation, and I am submitting it for publication as a Committee print. I want to express my gratitude for the work of Kevin F. Winch, Specialist in Economic Policy, and those who worked with him on this excellent report.

With best wishes,

Sincerely yours,

Christopher J. Dodd
Chairman
Subcommittee on Securities

CORPORATE DEBT: A PERSPECTIVE ON LEVERAGE

Report by the
Congressional Research Service

Prepared for the
Subcommittee on Securities,
Committee on Banking, Housing and Urban Affairs
United States Senate

January 1991

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CORPORATE DEBT: A PERSPECTIVE ON LEVERAGE

At the start of the 1980s, financial markets were unsettled: interest rates were at historically high levels and uncertainty was more common than usual. As the decade progressed, the deficit twins — Federal budget and trade — soared to unprecedented levels and helped make globalization a financial buzzword for the 80s. The Third World debt crisis was prominent in international financial discussions, and troublesome lending policies were epitomized in the S&L crisis. The combined forces of deregulation, technological advances, and new communication systems fostered novel investment strategies such as program trading and accelerated the consolidation of all types of financial services institutions.

What happened in the domestic corporate finance markets? Overall, the 1980s witnessed a marked acceleration in debt issuance by all kinds of borrowers, including corporations. Words of caution, dire predictions, and calamitous warnings have been the conventional reactions to this leveraging trend, with an occasional heterodox voice favoring the advantages of using other people's money.

This report examines 1) measures of corporate debt, 2) various cause and effect comments put forth to account for current trends, and 3) some of the prominent policy issues raised by concerned parties. More specifically, the growth pattern of corporate debt is examined, with special attention to rule-of-thumb measures of relative change such as liquidity ratios and debt-service coverage. Suggested explanations of this growth in debt have linked it to economic cycles, the prominence of leveraged buyouts in the 1980s, and differences among industries. There is a brief comparison with financial markets outside the United States: if those markets do not incorporate similar restraints/freedoms (e.g., taxation), but show similar developments, then causal relationships and policy options may seem less clear. In a final section, the report explores the implications of these trends for policy makers, and whether or not developments in the 1980s have altered perceptions of the relationship between public policy and corporate finance. Changes in the tax treatment of income received by corporate debt holders have been the focus of most proposals for shifting policy options.

Some of the terms used may not be familiar to all readers, and rather than digress to provide explanations throughout this study, the authors have prepared a glossary, included as an appendix to the report.

The increased reliance on debt rather than equity for *new* external financing in U.S. corporate finance is an important feature of this paper. Related trends include the following.

- In the overall context of indebtedness, the nonfinancial business sector accounts for more borrowing than any other group. Within the nonfinancial business sector, corporate debt accounts for most of the outstanding debt.

- Short term debt has grown more rapidly than long term debt: i.e., corporations have made more use of credit markets than capital markets.

- Shareholders' equity (net worth) continues to account for the lion's share of corporate capitalization, despite the growth in corporate debt.

Credible analysts have expressed concern over the presence of high leverage.[1] It seems reasonable, then, to investigate purported causes and effects, and especially to try to identify the threshold of peril. The results of such investigation are equivocal. This study provides examples of both domestic and international debt solvency and liquidity ratios, along with a discussion of their measurement and significance.

- When the increase in corporate debt is viewed in isolation, it provides a dramatic picture of growth. But when that same increase is compared to other productive sectors of the economy, it appears less exceptional and might even be credited as a moderating influence on the overall growth of debt in the U.S. economic picture.

- There is no consensus -- at the firm, the industry, or the aggregate corporate sector level — on what mix of debt and equity is optimal. Thus, there is no definitive answer as to whether or not a particular level of corporate debt is excessive. As an alternative to an optimum, comparative ratios (historical and international) of aggregate corporate indebtedness are often employed as benchmarks to evaluate the relative status of corporate debt.

In recent years, questions on the role that the Internal Revenue Code has played in the growth of debt financing have received special prominence in public policy debates. These points have become part of the public policy debate on the issue of corporate debt, and include the following.

- In general, studies dealing with tax aspects of corporate debt/equity considerations find no relationship between tax changes and the corporate debt buildup of the 1980s.

- The Joint Committee on Taxation identified four possible approaches to altering the favorable tax treatment of debt: A) Eliminate or reduce the distinction between debt and equity by integrating the corporate

---

[1] See, for example: Lee, William. *The Corporate Sector's Vulnerability to Macro Shocks*. Federal Reserve Bank of New York (Duplicated). 36 p. "But wherever high leverage exists, it is worrisome," p. 2.

and individual income tax systems; B) Eliminate or reduce the distinction between debt and equity by limiting interest deductions; C) Combine interest disallowance and dividend relief options; D) Other options.

- Some have argued that U.S. taxes increase the cost of capital and place domestic firms at a competitive disadvantage with respect to foreign firms. This contention is not widely accepted by economists; economic theory questions the merits of trying to affect international competiveness with tax policy. Nevertheless, in their search for a route to lower capital costs, some policymakers concerned with the global competitive position of American firms have called attention to the role of corporate debt.

At this juncture, we can identify a trend for increased corporate reliance on debt financing as a source of new external capital. Beyond that point, clarity gives way to murkiness. Nonetheless, there are credible points of view across a broad spectrum of causes, effects, and proposed cures.

SECURITIES

Corporate use of securities markets is most conveniently viewed as a division between equity and debt markets, and the stress in this report is on changes in the market for corporate debt. Debt, however, is often viewed in terms of its relationship to equity since they are the two basic components of corporate capital structure. The following brief comments on securities are provided as background for this subject.

EQUITY SECURITIES (STOCKS)

In general, equity securities grant the holder an ownership stake in a corporation and a right to share in the distribution of any corporate earnings. The investor in stock is willing to share in the uncertainty and risk of the enterprise in order to share its profits. Investors often anticipate that the stock market will assign a premium price to a successful, growing company, and they may also anticipate receiving dividends. Ownership shares are often divided between common stock and preferred stock. Common stock owners generally vote (in person or by proxy) at annual meetings for the election of the corporate board of directors and other corporate governance matters. Preferred shareholders do not vote at annual meetings; dividends must be paid to holders of preferred shares before any distribution is made to holders of common stock.

Stock issues with unusual features have become increasingly available, often tailored to the perceived needs of the institutional investor community. These shares typically include special rights and privileges, often referred to as "bells and whistles" by market participants. In most cases, these special features are incorporated in preferred stock issues; however, there are some common stock

issues with these bells and whistles. Examples include adjustable rate preferred stock, convertible adjustable preferred stock, increasing rate preferred stock, Dutch Auction preferred stock (also known as money-market preferred stock), and pay-in-kind preferred stock.

DEBT SECURITIES (BONDS)

Capital markets are a source of financial capital; in the case of bonds, the lenders of that capital expect to have the principal amount repaid when due, and in the meantime to receive interest income as scheduled.

Bonds are usually issued with a face value of $1,000; the annual interest payment is fixed in dollar terms, but expressed as a percent of the face value. This percentage yield is based on market interest rates at the time the bond is issued. Market interest rates change often, but after the bond is issued, the dollar amount of periodic income received by the bondholder stays constant; it is the price of the bond in the marketplace that adjusts to changing interest rates. As the bond approaches maturity, its market price will approach $1,000 because, when the bond is redeemed by the issuer, the bondholder receives the $1,000 face value of the bond.

The most frequently encountered type of corporate bond — a "straight" bond — pays a fixed dollar sum on a semiannual basis from the time the bond is first issued until it matures or is redeemed; generally, corporate bonds can be redeemed ("called") at the issuer's option following an initial call-protected period. Less common are convertible bonds which the holder can convert into the issuer's stock at a specific price for the stock; convertible bonds can be viewed as a delayed issuance/purchase of stock.

In addition to convertibility, bonds are usually further categorized by risk (debt obligations of the United States Government are *per se* riskless), maturity, security or collateralization (if any), coupon payment, redemption provision, and convertibility. High yield, or "junk" bonds are perceived as more risky than other corporate bonds and offer a higher return to compensate investors for the higher risk. Over the years, dynamic financial markets have provided an enormous variety of other types of corporate bonds, usually in response to shifts in market conditions. Financial advisers have become adept at fashioning debt instruments to meet virtually any conditions attractive to borrowers and/or lenders.

After the corporation's initial offering of a security to the public, the original purchaser may decide to sell the security, and this resale process may be continued by subsequent owners. This trading in already issued and outstanding securities constitutes the secondary market; the original issuers of the securities have no direct interest in secondary market trading. As a result of liquid markets — the ability to buy or sell a security without substantially affecting the market price — security owners can be a very fluid group, shifting without notice, and virtually impossible to identify at any particular time.

Most of the buying or selling of securities by the public takes place in this secondary, or resale market. Judging only by who is participating, the identity of the seller is the central difference between primary and secondary markets. Since this report is a study of changes in the market for corporate debt, it focuses on the primary market, the market in which the corporation raises funds.

For a perspective on corporate debt, the next part of the report offers a broad picture, presenting an overview of debt patterns in the larger nonfinancial sector; the period for which data is presented includes three recessions: 1974-1975, 1980, and 1981-1982.

NONFINANCIAL SECTOR DEBT

Corporate borrowing is but one of three types of nonfinancial business borrowing, and overall nonfinancial business borrowing is an important part of total borrowing in the nonfinancial sector. This part of the paper offers an overview of shifting borrowing patterns by all debt market participants; it is followed by a review of recent developments in corporate debt.

Most data presented in this section (and elsewhere in the study) are selected from the flow of funds accounts compiled and published by the Federal Reserve. The flow of funds data provide a financial market counterpart to the gross national product (GNP) and similar measures of overall economic activity. Thus flow of funds data are designed to be comprehensive and internally consistent; they complement the saving and investment measures in the GNP accounts with measures of associated lending and borrowing activity. All of the series in the Fed's flow of funds accounts are designed to exclude double counting; they are presented on a net basis.

The flows which measure lending and borrowing can also be viewed as incremental changes in the stock of debt, or outstanding balances; these outstanding balances are also recorded by the Fed and are the basis for much of the debt trend material in this report.

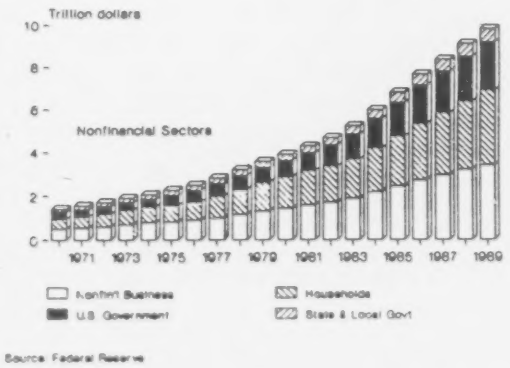
Corporate debt outstanding is reported as one of the sectors in the flow of funds. The sectoral structure of the flow of funds accounts has two major divisions, Finance and Nonfinancial. Commercial banks, savings institutions, insurance companies, finance companies, investment companies, and similar entities are subcategories in the finance sector. Because organizations in the finance sector are primarily financial intermediaries — they provide an efficient method of balancing diverse saving and investment decisions — they have no direct economic role, but serve as commendable facilitators; for this reason, the finance sector is generally excluded in this report. However, the environment that supported the rapid growth of nonfinancial business borrowing was also conducive to rapid growth in financial sector borrowing.

The nonfinancial sector — by far the largest part of the flow of funds accounts — can be viewed as a tiered structure conforming to the following pattern of organization:

Nonfinancial Sector
- U.S. Government
- Rest of the World
- Private domestic nonfinancial
  - State and local governments
  - Households
  - Nonfinancial business
    - **Corporate nonfinancial business**
    - Noncorporate business
      - Farm business
      - Nonfarm noncorporate business

This organizational structure clearly positions corporate borrowers nested deeply in the framework of all credit users in the U.S. economy. How corporate borrowing compares to the borrowing of other nonfinancial subsectors will be made graphically apparent in charts.

FIGURE 1. Total Debt



Source: Federal Reserve

Outstanding debt in all nonfinancial sectors progressed in an unbroken upward climb from $1.4 trillion in 1970 to almost $10 trillion in 1989, but the relative shares of the major elements of this debt showed little change. Particularly during the 1970s, State and local government debt grew more slowly than the other components; consumer debt and U.S. Government debt advanced at a more rapid pace than overall debt, absorbing the share of the total forgone by State and local government debt. Throughout this period of rapid growth in total debt, the nonfinancial business sector continued as the largest single group, with a share of the total varying in a narrow band between 36 and 40 percent.

The data plotted in figure 1 indicate that there was nothing out of the ordinary in the expansion of nonfinancial business debt; or, to restate the point, the data indicate that all sectors of the U.S. economy have expanded their outstanding debt at similar average rates in the last twenty years.

As noted above, the nonfinancial business sector is divided into corporate and noncorporate parts, with the noncorporate segment further divided into farm and nonfarm noncorporate sections. The primary concern of this report is the debt of the corporate nonfinancial business sector; concurrent developments in noncorporate nonfinancial business debt complement observations of business sector growth.

FIGURE 2. Business Indebtedness

Source: Federal Reserve

In figure 2, the component series of the nonfinancial business sector are presented in chart form; the total for each year shown in figure 2 is the same as the lowest tier of figure 1. The steadily increasing total amount of nonfinancial business debt outstanding is as obvious in this chart as in the previous one, but now there is a clear picture of disproportionate growth in the three disaggregated components of the nonfinancial business total. Outstanding farm debt accounted for almost 10 percent of the total nonfinancial business debt in 1970, peaked at 11.2 percent in 1980 but had fallen to less than 5 percent by the end of the 1980s. The nonfarm noncorporate business category includes partnerships and proprietorships, and the strong relative growth shown in the chart probably reflects the increased popularity of limited partnerships in this period. The most pronounced relative shift was in the nonfarm noncorporate category; starting at 20 percent of the total in 1970, this grouping was almost 40 percent of the total by the end of the 1980s.

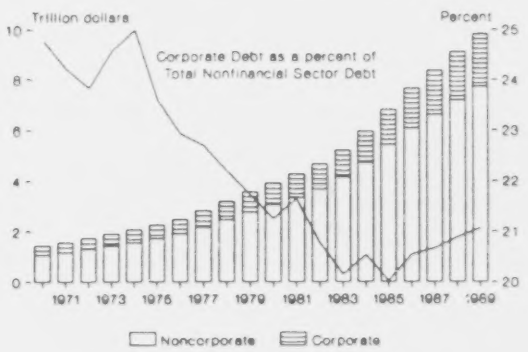
Corporate nonfinancial business debt grew at a slower pace than the noncorporate category, starting out at 70 percent of the total in 1970, dropping to a low of 55.1 percent in 1983 and recovering marginally since that date. Thus, while corporate debt maintained its dominant position and expanded considerably — from $352 billion in 1970 to over $2 trillion in 1989 — its growth was no match for that of the nonfarm noncorporate element.

Thus, in the overall context of indebtedness, the nonfinancial business sector accounts for more borrowing than any other group. Within the nonfinancial business sector, corporate debt accounts for most of the outstanding debt. In figure 2, these series are presented together to provide a perspective on the relative significance of corporate debt, the largest portion of the largest component of nonfinancial sector debt.

The total amount in figure 3 is the same as the total amount in figure 1, while the corporate debt numbers in figure 3 are the same as those in figure 2. When the relative growth of corporate debt in the nonfinancial sector is compared to all other nonfinancial debt as in figure 3, the comparison plainly shows a downward trend in the relative strength of corporate debt from 1973 to 1983. In recent years, the corporate debt share of the total has picked up, but still the decade of the 1980s ends with a corporate debt share of about 21 percent, compared to approximately 25 percent at the start of the 1970s.

In sum, when the increase in corporate debt is viewed in isolation, it provides a dramatic picture of growth. But when that same increase is compared to other productive sectors of the economy, it appears less exceptional and might even be credited as a moderating influence on the overall growth of debt in the U.S. economic picture.

FIGURE 3. Corporate Debt in Perspective



Source: Federal Reserve

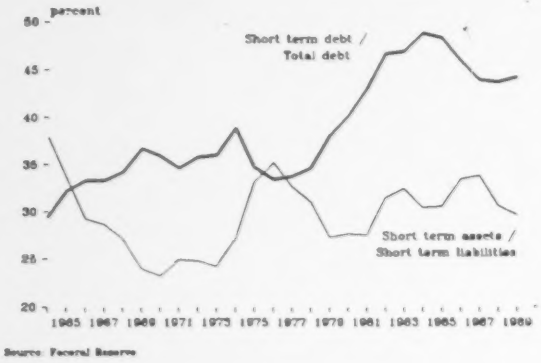
A question related to the overall growth of corporate debt is the composition of that debt. Some contend that an emphasis on short-term rather than long-term borrowing needlessly exposes corporations to greater risk, e.g., they may face tightening credit conditions together with the need to renew maturing credit on such a frequent basis that management focus may be unduly directed to short-term goals rather than long-range planning. Changes in the relative importance of products and services contributing to overall output may account for some of the shift to more reliance on short term credit.

As a "snapshot" view of a point that will be considered later in this paper, figure 4 shows two series calculated by the Fed as part of its flow of funds publication. The heavy line shows short term corporate debt as a percent of total corporate debt. A longer time period is presented in this chart to clarify the general upward trend since there is an apparent tendency for this measure to show directionless drift from time to time. The light line shows the proportional relationship between short term assets and short term liabilities — known in accounting jargon as the acid-test or quick ratio. For an individual corporation, when the ratio is less than one (equivalent to 100 percent on the chart), conservative evaluators could claim that the firm has stretched its ability to meet current obligations out of current assets; when the entire corporate sector is aggregated as in this chart, some more limited criterion may be appropriate. In any event, it appears that for the corporate

sector as a whole the acid-test ratio measures in recent years are the most positive in a generation.

This summary perspective on corporate debt serves as an introduction to the more detailed observations in the following sections. Since many of these data involve ratios like the ones in figure 4, an introduction to financial ratio analysis is provided next.

FIGURE 4. Short-Term Corporate Debt



Source: Federal Reserve

FINANCIAL RATIOS

The use of ratios to monitor corporate financial trends is a standard practice of financial analysts. This approach is empiric, evolving from techniques first developed in the business community. Information in this report on the history of ratio analysis relies primarily on the work of James Horrigan.[2]

Financial ratios for particular business enterprises were developed as analytic accounting tools for both managers and creditors, with the credit evaluation requirements of commercial bank lenders dominating. By the 1890s, lender requests for financial statements from borrowers had become widespread, and among many ratios derived from these statements, the ratio of current assets to current liabilities (the "current ratio") was the most widely used. Managers, on the other hand, were most interested in profit margins and turnover ratios. By the 1920s, benchmark ratios for particular industries were in use.

Horrigan notes that the establishment of the SEC in the 1930s "increased the supply of financial statements and influenced their content."[3] Other indications of official interest in ratio analysis can be found in the U.S. Department of Commerce's

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[2] Horrigan, James O. A Short History of Financial Ratio Analysis. *The Accounting Review*, v. 43, no. 2, April 1968. p. 284-294; reprinted in Horrigan, James O., ed. *Financial Ratio Analysis: An Historical Perspective*. New York, Arno Press, 1978. 256 p. in various pagings.

[3] Horrigan, A Short History of Financial Ratio Analysis, p. 288. Also see Previts, Gary John. *The Development of SEC Accounting*. Reading, Mass., Addison-Wesley Publishing Co., 1981. 430 p.

Bureau of the Census quarterly series of ratio measures for individual industries.[4] In addition, the use of financial ratios has been endorsed by the Small Business Administration as a managerial tool.[5] The Federal Reserve Board and the Internal Revenue Service also publish data used in financial ratio analysis.

Thus, the use of ratio analysis evolved from a trial-and-error approach developed by accountants and financial analysts. One striking aspect of this unfolding is absence of a theoretical framework for the empiric usage. As Horrigan notes,

> From a negative viewpoint, the most striking aspect of the present [1968] state of ratio analysis is the absence of an explicit theoretical structure....the subject of ratio analysis is replete with untested assertions about which ratios should be used and what their proper levels should be. . . .[6]

Theoretical studies have, of course, been published and are in use as guidelines to understanding corporate finance developments. In particular, models dealing with the optimal capital structure for firms make frequent appearance in corporate finance literature, but are not useful in capitalization ratio applications. Thus, the current state of knowledge is not so much further advanced than it was when Horrigan was writing. There is no general model. For example, under the heading "choosing the firm's debt-equity level," a widely used textbook in corporate finance offers the following suggestion.

> It should be clear that there are no simple answers to the capital structure decision. For example, we can't say that more debt is always better. Debt may be better than equity in some cases, worse in others. We suggest, however, that you use a three-dimensional checklist when thinking about capital structure. These dimensions are taxes, risk, and asset type.[7]

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[4] U.S. Bureau of the Census. *Financial Report for Manufacturing, Mining, and Trade Corporations*. Quarterly. Previously, the data had been published by the SEC and the Federal Trade Commission (FTC).

[5] See, for example, Sanzo, Richard. *Ratio Analysis for Small Business*. 4th ed. Washington, U.S. Govt. Print. Off. 1977. 66 p. (Small Business Administration, Small Business Management Series, no. 20)

[6] Horrigan, A Short History of Financial Ratio Analysis, p. 294.

[7] Brearly, Richard and Stewart Myers. *Principles of Corporate Finance*, second edition. New York, McGraw-Hill, 1986. p. 400.

A recent study of theoretical approaches addressing the question of why firms have been borrowing more funds in recent years notes that "In the end, none of these theories is completely satisfactory."[8]

Ratio analysis was developed by market practitioners to meet their needs at the time — not an unusual circumstance in corporate finance. As a result of a relatively undisciplined evolutionary process, there are no rules as to which ratios should be used, when they should be used, nor any ratio value which can be definitively said to establish the crossing of a threshold.

The next sections consider the data source for corporate financial ratios, the various types of ratios in use, and the use of financial ratios to measure aggregate economic activity rather than to evaluate a single firm's financial prospects.

FINANCIAL RATIOS — CORPORATIONS

There are basic elements to a company's financial statement; the first report is the profit and loss statement, the second is the balance sheet. Data in these reports are the raw material for the ratios analysts use as part of a company's financial evaluation. The following definitions of these terms are taken from the glossary to this CRS report.[9]

> Profit and loss statement. A summary of the revenues, costs, and expenses of a company during an accounting period; also called income statement, operating statement, statement of profit and loss, income and expense statement. Together with the balance sheet as of the end of the accounting period, it constitutes a company's financial statement.
>
> Balance sheet. A financial report, also called a statement of condition or statement of financial position, showing the status of a company's assets, liabilities, and owners' equity on a given date, usually the close of a month. One way of looking at a business enterprise is as a mass of capital (assets) arrayed against the sources of that capital (liabilities and equity). Assets are equal to liabilities and equity, and the balance sheet is a listing of the items making up the two sides of the equation. Unlike a profit and loss statement, which shows the results of operations

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[8] Myers, Stewart C. Still Searching for Optimal Capital Structure; p. 81 in Kopcke, Richard W. and Eric S. Rosengren, eds. *Are the Distinctions Between Debt and Equity Disappearing?* Boston, Federal Reserve Bank of Boston, 1990. For a study contending that the regulation of financial intermediaries can affect corporate capital structure, see Kopcke, Richard W. and Eric S. Rosengren. Regulation of Debt and Equity; p. 173-206 in Kopcke and Rosengren, *Are the Distinctions Between Debt and Equity Disappearing?*. p. 225.

[9] Both definitions are taken from Downes, John and Jordan Elliot Goodman. *Dictionary of Finance and Investment Terms*. Woodbury, New York, Barron's, 1985. p. 28, 310.

> over a period of time, a balance sheet shows the state of affairs at one point of time. It is a snapshot, not a motion picture, and must be analyzed with reference to comparative prior balance sheets and other operating statements.

Balance sheet data are used to measure asset protection. Following a worst-case argument, financial statement analysts are primarily concerned with the risk that a company will become insolvent and end up in bankruptcy court. Protection from bankruptcy is provided by shareholders' equity, the difference separating the values of assets and liabilities. Thus, shareholders' equity is the cushion protecting corporate assets from adverse business conditions. Solvency risk is usually measured as a function of leverage, i.e., the extent to which borrowed funds are a factor in a company's capital structure.

Liquidity is a major concern of security analysts dealing with corporate bonds. They want to know whether or not a company's current income will cover its current financial obligations, with a special concern regarding the interest due on its debt. Failure to make timely payments can amount to default on a loan, and may lead to bankruptcy. Analysts study liquidity by measuring earnings protection, e.g., the interest coverage provided by cash flow; these measures are derived from data in the profit and loss statement.

These conceptual measures — solvency ratios and liquidity ratios — as applied to the corporate sector are dealt with in a later section of this report.

FINANCIAL RATIOS — VARIETIES

Analysts of corporations generally insist that financial ratio analysis should be used in conjunction with other analytic tools. It is generally accepted that specific ratios will be used for particular industries, reflecting the structural organization of that industry; the size of the firm may also influence the choice of ratios. The object of the analysis is also significant. According to one recent study, the "more common purposes" for analyzing financial statements are: equity investment, credit extension, supplier health, customer health, employer health, antitrust regulation, internal operations analysis, competitor analysis, going concern judgment by auditors, damage valuation, and valuation of an acquisition candidate.[10] Finally, in the absence of theoretical guidelines, the analyst's task apparently involves as much art as science; as one study notes,

> In order for the ratios to be meaningful, careful and skillful interpretation is a necessity. There is no simple way to analyze a firm's financial strengths and weaknesses. The ratios are indicators, and this must be realized before the person using ratio analysis can translate their significance.

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[10] Stickney, Clyde P. *Financial Statement Analysis: A Strategic Perspective*. San Diego, Harcourt Brace Jovanovich, 1990. p. 2-4.

> These ratios give no literal explanations. The task of explaining is the responsibility of the interpreter.[11]

Clearly, ratios by themselves do not reveal all matters of interest to the financial analyst. And, perhaps because the use of ratios can be approached and interpreted in so many ways, analysts employ different ratios at different times for their particular tasks. Meir Tamari emphasizes the need for careful preparation:

> Rules of thumb and the careful scrutinizing of the notes and comments on the financial reports can assist the analyst in overcoming many of the weaknesses attributed to these accounts.... As the number of ratios which it is possible to calculate is practically unlimited, the lack of a prior definition of the aspect analysed will only lead to confusion and the misuse of this analytical tool.[12]

Tamari names the following as "primary" relevant ratios:[13]

Profitability Ratios

Profit on equity =
Profit before interest, dividends and taxes ÷ Total assets
Profit as a ratio of total investment =
Profit after interest ÷ Owners' equity
Sales as an indicator of profitability =
Sales ÷ Total assets

Liquidity Ratios

Cash flow analysis =
1. Current liabilities which have to be paid in the short run ÷ Profit before taxes, interest, dividends and depreciation.
2. Current assets minus current liabilities ÷ output

Current ratio =
Current assets ÷ Current liabilities
Quick ratio or acid test =
Current assets minus inventory ÷ Current liabilities

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[11] Steffy, Wilbert, Thomas Zearley, and Jack Strunk. *Financial Ratio Analysis: An Effective Management Tool*. Ann Arbor, Industrial Development Division, Institute of Science and Technology, University of Michigan, 1974. p. 4.

[12] Tamari, Meir. *Financial Ratios: Analysis and Prediction*. London, P. Elek, 1978. p. x, 182.

[13] Tamari, Financial Ratios, Chapter 2 in general, and p. 46.

Capital Gearing or Leverage Ratios

Equity ÷ Total funds
Equity ÷ Net assets (long-term funds)

Income gearing or Leverage Ratios

Interest ÷ Net profit (after payment of interest)

Performance Ratios

Output ÷ Fixed assets
Output ÷ Inventory of raw material
Output ÷ Inventory of finished goods and work in progress
Sales ÷ Trade debtors (optionally, X 365 days)

Tamari's list is presented here to illustrate the range of general ratios which can be used. Analysts writing on this subject invariably prepare their own lists, and while there is considerable overlap, no two lists are the same. For example, interpreting "key" ratios is a routine part of the bond rating process. Moody's Investors Service, one of the major corporate bond rating organizations, has identified fifteen key ratios. According to Moody's, "the financial and operating ratios given are of a practical nature for the purposes of making the facts and figures shown of greater informative value."[14]

Similarly, Standard & Poor's and other rating services use selected ratios which they have found to be reliable indicators.[15] Similar lists are usually included in scholarly studies.[16]

FINANCIAL RATIOS — CORPORATE SECTOR

The evolution of financial ratio analysis independent of a theoretical framework has already been noted. Consistent with this absence, in the writings studied by CRS, there is a scarcity of comment dealing with the extension of these firm-specific

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[14] Moody's Investors Service. *Moody's Industrial Manual, 1990*, vol. 1. Moody's Investors Service, New York, 1990. p. v.

[15] For a description of ten key ratios identified by Standard & Poor's, see Standard & Poor's *CreditStats*, June 11, 1990. p. 3. For a description of other corporate bond rating agencies — Fitch; Duff and Phelps; and McCarthy, Chrisanti, and Maffei — see Ederington, Louis H. and Jess B. Yawitz. The Bond Rating Process. p. 23-31 to 23-34 in Altman, Edward I. and Mary Jane McKinney, eds. *Handbook of Financial Markets and Institutions*. 6th ed. New York, Wiley, 1987.

[16] See, for example, Steffy, Zearley, and Strunk, *Financial Ratio Analysis: An Effective Management Tool*, p. 8; and Stickney, *Financial Statement Analysis: A Strategic Perspective*, p. 250.

tools of security analysts to the entire corporate sector of the economy. Horrigan points out that, during the 1940s,

> ratios were increasingly used as independent and descriptive variables in aggregate economic studies.... Ratios were also being used as variables for examining and describing economic activity, thus further widening the empirical base of ratio analysis.[17]

Is it necessarily the case that what is true for one corporation is also true for all corporations as a group? In general, this question is not considered in the corporate finance literature reviewed for this study. Nevertheless, provocative inferences are not hard to find. For example, Benjamin Friedman, professor of political economy at Harvard University, offered the following insight:

> This heightened aversion to recession [by the Federal Reserve] is probably due, at least in part, to the increased financial fragility that has resulted from the rise in corporate indebtedness.... One additional consequence of rising corporate indebtedness may therefore be to complicate — indeed, to threaten and, ultimately, to impair — our central bank's ability to achieve stable prices.[18]

In a similar vein, noted Wall Street economist Henry Kaufman, shared his views:

> What risks do the mounting debt pose for financial stability? Here no simple formula will reveal to us the flashpoints of economic and financial trouble.... large equity positions relative to debt provide society with enhanced freedom and maximum economic flexibility.[19]

In addition, Kaufman pointed out pitfalls associated with off-balance sheet financing — failure to account for items such as pension liabilities and lease obligations which are not included in conventional ratios.

> Even so, these estimates understate matters, because there is a sharply expanding hidden debt for which no aggregate data are available. This includes, for example, futures, options, interest-rate swaps, currency swaps, credit guarantees by banks and insurance companies, and lines of credit. In addition, debt growth may be disguised by accounting conventions that permit the netting out of many assets and liabilities. If we could calculate the total of *gross* liabilities, then the credit structure

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[17] Horrigan, A Short History of Financial Ratio Analysis, p. 290, 291. The author cites studies reflecting this development.

[18] Friedman, Benjamin M. Discussion. p. 34-35 in Kopcke and Rosengren, *Are the Distinctions Between Debt and Equity Disappearing?*

[19] Kaufman, Henry. Debt: The Threat To Economic and Financial Stability. (Federal Reserve Bank of Kansas City) *Economic Review*, December 1986. p. 6.

would be much larger than has been estimated. In other words, borrowers, financial intermediaries, and others probably employ greater leverage of debt to capital than is discernible, given current balance-sheet conventions.[20]

CORPORATE DEBT: HOW MUCH IS ENOUGH?

Debt is not a new phenomenon in America, but for some observers, recent levels of debt are ominous. The following is an example of a worst-case scenario from *Fortune* magazine; the Marx and Engels echo may be intentional.

> A specter is haunting America in the Nineties: the specter of debt. A mountain of unsustainable debt threatens to transform the U.S. from a global into a regional power, to trigger large-scale and unilateral American disarmament, and to initiate an absolute decline in American living standards. Apocalyptic? Unthinkable? Yes, until recently. But now America may be on the brink of becoming the next Brazil.[21]

Less hyperbolic expressions of concern with the debt build-up have become common, and often go well beyond financial market considerations. The following comment captures many of the elements presented by those who view the growth of debt with unease.

> Overall, for the U.S. economy, high debt levels are dangerous to the extent that collateral positions are weak for a significant fraction of corporations and that provisions (either explicit or implicit) do not exist for adjusting the obligations to common risks. . . .
>
> There are some corollary factors also suggesting that high debt levels make the economy particularly vulnerable to a recession. One consideration involves the nature of bankruptcy laws in the U.S.. . . and concern for the potential of widespread defaults does not seem misplaced. . . .
>
> Two other factors involve external effects. First, a kind of "contagion effect" is possible; the default of a large firm or group of large firms can induce panic among lenders, precipitating a liquidity crisis. . . . Second, to the extent demand externalities (due, for example to imperfect competition) [are present], the effects of financial distress can spread throughout the economy. In this kind of setting, a downturn in a financially troubled sector can spill over to other sectors. . . .

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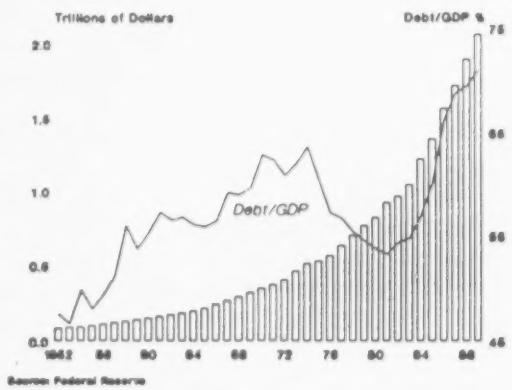
[20] Kaufman, Henry. *Interest Rates, The Markets, and The New Financial World*. New York, Times Books, 1986. p. 36-37. Emphasis in the original.

[21] Gray, John. The Brazilianization of America. *Fortune*, August 27, 1990. p. 107.

> As we have noted (in our view) the cause of concern over high leverage rests on the premise that it limits the ability of corporations to optimally share industry and economy-wide risks with outside lenders. To the extent there is a tax incentive encouraging the use of debt relative to equity, it is relevant to consider how the tax system fits into the overall picture.[22]

This part of the report examines current domestic aggregate corporate debt ratios. Figure 5 illustrates one such debt ratio trend; it compares the historical cost of all nonfinancial corporate debt outstanding — both long-term and short-term — to the value of total output of nonfinancial corporations (called corporate gross domestic product or CGDP) between 1952 and 1989.[23]

FIGURE 5. Nonfinancial Corporate Debt



In figure 5, the bars show credit market debt, measured in trillions of dollars on the left-hand axis. Overall, the chart shows that credit market debt of domestic nonfinancial firms rose from a fraction of a trillion dollars in 1952 to well over $2 trillion in 1989. It is this remarkable growth in corporate debt — a trend which clearly accelerated in the 1980s — which has been the focus of concerned observers. The rising line shows the ratio of nonfinancial credit market debt to nonfinancial corporate CGDP and is measured on the right axis. This line provides graphic evidence that corporate reliance on debt financing rose much more rapidly than corporate output (CGDP); in other words, the growth in corporate output is not an adequate explanation for the growth in corporate debt, based on the relationship between the two prior to the 1980s.

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[22] Gertler, Mark and R. Glenn Hubbard. *Taxation, Corporate Capital Structure, and Financial Distress.* (Duplicated.) October 1989. (National Bureau of Economic Research Conference on Tax Policy and the Economy, November 14, 1989.) p. 11-12. (Footnote in original omitted.)

[23] Corporate gross domestic product is a component of gross domestic product (GDP), a measure of total domestic output of goods and services; GDP, in turn, is a component of gross national product (GNP), the market value of the country's total output of goods and services.

The liability side of the corporate balance sheet includes all credit market instruments (plus miscellaneous small accounts such as trade debt and payable taxes); the debt capital raised in credit markets is classified as either long-term or short-term. Net worth (also known as equity capital, or shareholders' equity) is the balancing item between assets and liabilities.

FIGURE 6. Corporate Capital

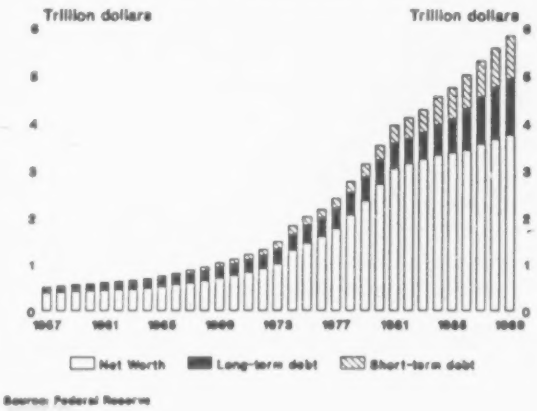


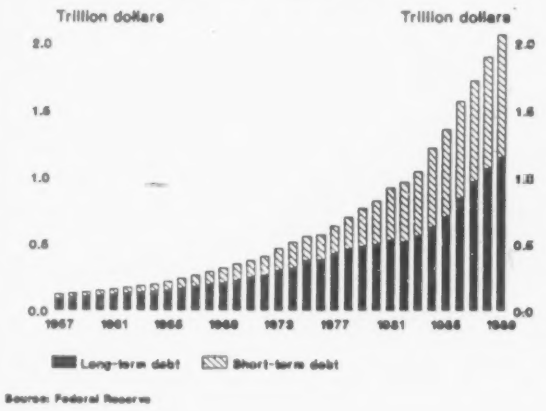
Figure 6 provides an overview of corporate capitalization; for all nonfinancial corporate business, the chart shows trends for the components of corporate capital structure: shareholders' equity (net worth), and short- and long-term debt. Figure 6 shows that between 1957 and 1989 corporate capitalization grew from just over $500 billion to over $5.8 trillion. The chart indicates dramatically that equity capital dominates corporate capital structure, even though the equity component fell from 76 percent in 1957 to 65 percent in 1989. The chart also displays the vigorous growth in the debt component of corporate capital. The growth in corporate debt outstanding is primarily due to a substantial increase in the relative and absolute amount of short-term debt outstanding.

Figure 7 isolates the debt data from the previous chart to show long term debt and short term debt capitalization trends between 1957 and 1989. While t here was a substantial increase in long-term debt outstanding during this period, the relative position of long-term debt in the total picture actually declined modestly. The chart shows short term debt growing from just over 29 percent of total debt (short term plus long term) in 1957 to 44.2 percent by 1989. Corporate financial officers reacted to the high and volatile interest rates of the 1970s and 1980s with a clear preference for the flexibility provided by short term instruments. While there is unmistakable evidence that long term instruments continue to dominate corporate debt, the new prominence of short term maturities is self-evident.

There is no consensus — at the firm, the industry, or the aggregate corporate sector level — on what mix of debt and equity is optimal. Thus, there is no definitive answer as to whether or not a particular level of corporate debt is excessive. As an alternative to an optimum, comparative ratios (historical and international)

of aggregate corporate indebtedness are often employed as benchmarks to evaluate the relative status of corporate debt.[24]

FIGURE 7. Corporate Debt



Corporate debt can be evaluated using leverage ratios, measures which fall into two broad categories: 1) solvency ratios, which gauge a firm's ability to meet its debt obligations over the long-term, and 2) liquidity ratios, which measure a firm's ability to meet debt obligations in the short run. Debt solvency and debt liquidity ratios measure corporate capacity to handle debt by comparing the value of corporate debt payment obligations to underlying wealth measures, such as assets, output, sales, capitalization, equity, and cash flow. Debt ratios are routinely used by security analysts, credit rating services, bankers and businessmen in corporate securities pricing and in the determination of credit ratings, loan riskiness, and acquisition pricing.

DEBT SOLVENCY RATIOS

Solvency refers to the long-term ability of firms to repay debt. Solvency ratios measure the proportional relationship between corporate liabilities and the underlying corporate assets. Corporate assets may include everything owned by a corporation or owed to it. Thus, debt-asset ratios indicate the balance between corporate debt (either all liabilities or some part of liabilities, e.g., long-term debt) and corporate assets. A debt-asset ratio — also known as a capitalization ratio — shows the proportion of total corporate capital represented by debt.

Debt-asset ratios typically divide corporate debt by the value of corporate assets (tangible and financial). The lower the debt-asset ratio, then the greater the proportion of assets available to serve as a buffer in the event of financial distress or eventual liquidation.

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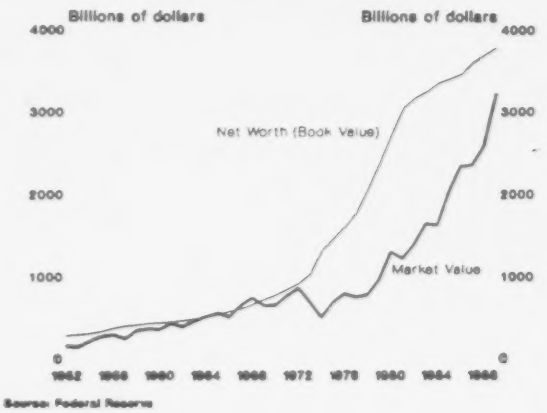
[24] Leverage ratios can provide many insights into the historical development of the riskiness of corporate debt; each one of the several types of leverage ratios provides a particular perspective on a particular dimension of corporate indebtedness. See: Taggart, Robert, Jr. Secular Patterns in the Financing of U.S. Corporations; in Friedman, Benjamin, ed. *Corporate Capital Structure in the U.S.* Chicago, University of Chicago Press, 1985. p. 13.

While debt-asset ratios indicate the relationship between corporate debt and corporate assets, debt-equity ratios measure the relationship between debt and corporate assets not offset against debt. Equity, shareholders' equity, owners' equity, and net worth are synonyms for the residual shareholder claim on corporate assets remaining after all corporate liabilities have been subtracted from all corporate assets. Shareholders' equity serves as a cushion, protecting the firm from forced liquidation in periods of poor income generation.

FIGURE 8. Equity Value
Book Value *vs.* Market value



Source: Federal Reserve

Aggregate corporate equity or balance sheet net worth is also known as the *book value* of corporate equity, i.e., the value of the equity as carried on the books of the corporation. The shares of many corporations are actively traded in securities markets, and, for those companies, the *market value* of corporate equity can be calculated as the product of the number of shares outstanding and the market price. Based on the assumption of efficient stock markets, it is generally expected that these two values will be very close. However, as indicated in figure 8, divergence appeared in the 1970s and persisted through the 1980s. One suggested explanation of the merger wave of the 1980s (including the leveraged buyouts discussed in a later section of this paper) credits the activity of market participants eager to take advantage of the gap between book value and market value of corporate shares.

MEASURING DEBT SOLVENCY RATIOS

Commentators have been engaged in an active discussion over the virtues of measuring debt solvency ratios in historical cost (for debt) or book value (for equity) terms *vs.* measurement in current cost or market value terms.[25] In general, the ratios developed in this report use book value of corporate equity. All capitalization ratios are closely related — they are variations of comparative measures of balance sheet items. Studies that use historic corporate solvency trends appear

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[25] See, for example: Taggart, Secular Patterns in the Financing of U.S. Corporations, p. 13-26; and Wall, Larry. Leverage Ratios of U.S. Nonfinancial Corporations. *Federal Reserve Bank of Atlanta Economic Review*, v. 73, May-June 1988, p. 12-29.

to base their decisions on the choice of a particular type of solvency ratio on reasons that appear largely related to data availability and/or convenience.

Historical cost measurements of debt reflect the original price paid, or the original value established for the debt instruments. On the other hand, book values of assets reflect the historical cost of the assets, less their accumulated depreciation (essentially, for physical assets, a deduction for wear and tear). The current cost or market value of debt, assets and equity is the same as the current market value.

Valuing corporate assets and securities involves a number of tradeoffs and poses dilemmas. All of the valuation conventions have their shortcomings. One financial accounting textbook observes:

> Should the dollar amount of debt be computed at book value, at the principal amount of the debt, at the current market price of the debt, or at some other figure?. . . Is it useful to distinguish between debtor claims that must be paid in the event of company bankruptcy and other debts that depend on the results of future operations (such as deferred taxes)?
>
> The dollar amount of equity also presents difficulties in definition and measurement. The (market) trading value of company equity shares will usually differ from the net worth shown on the balance sheet.
>
> Some financial writers suggest that the debt-to-asset ratio of the firm be computed using the *market values* of the related securities. This approach, however, is difficult to apply for two reasons: (1) many items that might be considered as debt, (leases and pension liabilities, for example) are not publicly traded, so market values are unavailable, and (2) the underlying purpose of debt-to-asset calculations is not served by these values because these values will change dramatically if bankruptcy becomes a likely event.[26]

While the above observation speaks specifically to the use of solvency ratios as tools of analysis for individual corporations, similar limitations are associated with their use at the aggregate corporate level. The following sections examine historical book and market valued aggregate corporate debt solvency ratios, and discuss their advantages and limitations.

BOOK VALUE SOLVENCY RATIOS

Methodologically, the simplest approach to collecting debt-asset and debt-equity ratios involves the use of corporate balance sheet data measured in book value. There are some drawbacks involved in the use of book value ratios:

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[26] Backer, Morton, Pieter Elgers, and Richard Asebrook. *Financial Accounting Concepts and Practices*. New York. Harcourt Brace Jovanovich. 1988. p. 607-608.

- Some observers claim that the high inflation rate of the late 1960s and the 1970s resulted in a significant understating of reported corporate book equity and book asset values relative to their true market value. The complementary effect of understating values in that time period is overestimating risk as measured by debt equity and debt asset solvency ratios.

- Unanticipated inflation can result in a wealth transfer from creditors to debtors that is not captured by historical cost accounting techniques.

- Depreciation allowances have been liberalized over the last 25 years. Because assets are now written off earlier, this liberalization has generally lowered reported asset and equity values, and thus boosted debt/equity and debt-asset ratios, further distorting the differences between book-value solvency ratios of the 1970s, 1980s and earlier periods.[27]

- Another possible shortcoming of book-value debt-solvency ratios revolves around the large number of corporate stock repurchases (also called stock buybacks) that occurred in the 1980s. These stock repurchases were largely undertaken to buoy stock prices or as defenses against threats of hostile takeovers.[28]

  Federal Reserve Board estimates indicate that over $1.5 trillion in stock repurchases occurred from 1984 to 1989.[29] Some observers claim that firms involved in stock repurchases tend to use a book-based valuation of assets, and that those firms tend to write off the equity retired in the buy-back at current market prices. As a consequence, since the value of "today's market prices are so much higher than the equity values carried on company's books, [then] write-off adjusted book values look lower than they actually are."[30] If it is true that large amounts of equity have been written-off at exceptionally high market values, then the book value of assets reported in the last half of the 1980s may indeed

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[27] Taggart, Secular Patterns, p. 17.

[28] See U.S. Congress. House. Committee on Energy and Commerce. Subcommittee on Telecommunications and Finance. *Corporate Finance Trends: 1989.* A Report prepared by the Congressional Research Service (by Kevin F. Winch). (Committee Print 101-N) Washington, G.P.O., 1989. p. 20-24.

[29] Board of Governors of the Federal Reserve System. *Flow of Funds Accounts, Fourth Quarter 1989.* Release Z.1, March 7, 1990. p. 3. The buyback data are for nonfinancial corporations.

[30] Donnely, Barbara. Stock-Picking Tools May Need Updating. *Wall Street Journal*, July 19, 1989. p. C1, C22.

be artificially low, and thus the concomitant debt-equity and debt-asset ratios may be artificially high.[31]

FIGURE 9. Debt-Equity Ratios

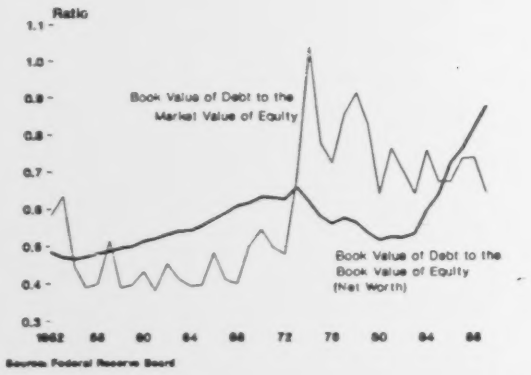

Figure 9 compares two related solvency ratios published by the Fed: 1) the book value of debt to the book value of equity and 2) the book value debt to the market value of equity. The figure shows that the book value debt-equity ratio (the thick line) rose moderately until 1973 when it went into a decade-long fall. After reversing direction in 1983, the ratio grew steadily through the rest of the 1980s, and by 1989 was at a forty year high. In the chart, the ratio of the book value of debt to the market value of equity (the thin line) reaches its peak in 1974 and trends downward through the mid-1980s; it has fluctuated in a trendless fashion since that time. Still, by the late 1980s, it was considerably higher than it had been in the 1950s and the 1960s.

The chart also indicates that growth in the book-value of debt outstripped growth in the book-value of shareholders' equity. This may be due, at least in part, to the influence of inflation: when measured in historical cost terms, the ratio will not reflect the increased market-value of tangible assets.

MARKET VALUE SOLVENCY RATIOS

Observers note a tendency for overstating book value debt-equity and debt-asset ratios in significantly inflationary times (a result of the understating of the real value of assets and the exaggeration of the real debt load).[32] To correct for this, book-value ratios have been converted into inflation adjusted ratios, known as market-value or current-cost ratios. When firms refinance short- or long-term debt through more borrowing, it is the current cost of that borrowing which is the actual cost of redeeming the older debt; these refinancings add to the appropriateness of using market-value ratio measures.[33]

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[31] Ibid.

[32] Taggart, Secular Patterns, p. 23.

[33] Bernanke, Ben and John Campbell. Is There a Corporate Debt Crisis? *Brookings Papers on Economic Activity*. 1st Quarter 1988. p. 97.

A number of methods have been used to convert book-value-based debt-equity ratios into current-cost or market-value-based ratios. One approach is to estimate the present market value of corporate securities by capitalizing anticipated corporate dividend and interest payments at an appropriate interest rate. Another approach to estimating the market value of corporate equity involves the use of book-value data on comparable common stocks from corporate financial data series such as Standard & Poor's Compustat corporate statistical series.[34]

Just as there are drawbacks in the use of book-value ratios, current-cost or market-value-leverage ratios also have shortcomings. The conversion of book-value-ratios into market-value ratios is frequently subject to estimation error problems.[35] For example, calculating the current cost of aggregate debt-equity ratios may require choosing appropriate bond yield and equity dividend series, even though no series is totally representative of aggregate bond yield and stock dividend behavior. Moreover, calculating the current cost of debt-asset ratios may involve the uncertainty inherent in selecting proper asset replacement values.

There is a great deal of concern that a significant amount of the corporate indebtedness incurred over the last half of the 1980s went to finance stock repurchases, corporate mergers and leveraged buyouts at the expense of the necessary growth and replenishing of tangible corporate assets in the form of plant and equipment. Two separate observations illustrate the dynamics of this tradeoff:

> Share repurchases, cash mergers, and cash acquisitions of other companies have increased sharply in the last several years. At the high end of the estimates, total share repurchases plus cash mergers and acquisitions averaged $30 billion from 1980 to 1983, $92 billion in 1984, and over $110 billion in each subsequent year through 1988.
>
> The concomitant increase in corporate debt suggests that corporations financed many of these transactions by borrowing. From 1980 to 1983, net issues of corporate debt averaged $65 billion annually. Net debt issues jumped in 1984, to $170 billion, and have remained above $130 billion in each year since. The rise in debt has exceeded the increase in corporate investment over the period.[36]

More direct evidence indicates the use of debt issues and asset reductions in financing these transactions.

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[34] For a comparison of discounted cash flow models and market comparable approaches to valuation, see Hickman, Kent and Glenn H. Petry. A Comparison of Stock Price Predictions Using Court Accepted Formulas, Dividend Discount, and P/E Models. *Financial Management*, Summer 1990. p. 76-86.

[35] Taggart, Secular Patterns, p. 23.

[36] Henderson, Yolanda. Is Leverage A Tax Dodge — Or Not? *New England Economic Review*, March/April 1990. p. 17.

> . . . In the 1980s, stock repurchases were the difference between rising leverage and falling leverage in terms of long-term debt in the United States. . . in the absence of the repurchases, the ratio of long-term debt to assets for the sample [of diverse corporations drawn from a Standard & Poor's corporate data base] would have been about 18 percent in 1988 instead of 27 percent.[37]

As a consequence of this leveraging, some concern exists that U.S. companies, by giving priority to activities like stock repurchases, may have sacrificed the opportunities obtainable from giving greater priority to the expansion and upgrading of their physical assets.[38]

RECENT CAPITALIZATION RATIO STUDIES

There have been a number of studies on trends in aggregate corporate solvency ratios. A benchmark study, prepared by Ben Bernanke and John Campbell, considers several measures of trends in corporate financial stability between 1969 and 1986 using the Compustat data base of the Standard and Poor's Corporation.

Among the several measures of corporate financial health that Bernanke and Campbell investigated were market-value debt-asset ratios for the Compustat sample. The authors use a debt-asset ratio defined as the market value of the Compustat sample companies' debt divided by the sum of the market value of their equity plus the market value of their debt (i.e., externally held claims on corporate assets).[39] This form of debt-asset ratio measures the relative proportion of corporate capital structure (debt and equity) accounted for by debt. Sometimes called a capitalization ratio, it is another measure of corporate solvency.

Bernanke and Campbell found that their market debt to asset ratio "rose sharply" in 1974, and then fell slowly after 1974 until about 1980. They concluded that there "has been no significant trend in this measure during the 1980s because the recent growth of total debt has been offset by the rising stock market."[40]

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[37] Remolona, Eli. Understanding International Differences in Leverage Ratios. (Federal Reserve Bank of New York) *Quarterly Review*, Spring 1990. p. 42.

[38] See: Holusha, John. Are We Eating Our Seed Corn? *New York Times*, May 13, 1990. p. F-1.

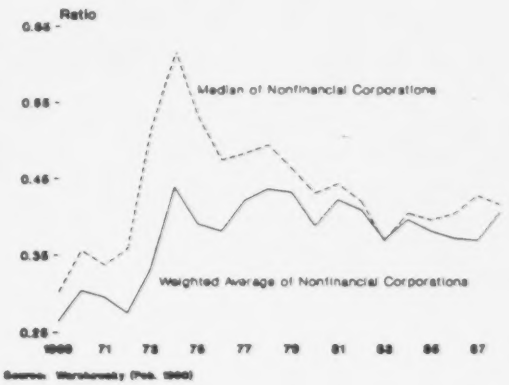
[39] Market debt values for the sample Compustat companies were arrived at by following several simplifying algorithmic assumptions such as that market value of short-term debt would be set to equal the book value and that sample Compustat companies' long-term debt would have a coupon interest rate equal to the Baa rate at issuance and a yield to maturity at the current Baa bond rate.

[40] Bernanke, Campbell, *Is There A Corporate Debt Crisis*, p. 103.

In a February 1990 Federal Reserve study, Mark Warshawsky expanded the Bernanke and Campbell work to include what he regards as a more realistic measure of market debt. In addition, Warshawsky used Compustat samples which are broader and less biased toward larger companies; the data coverage was extended to include 1987 and 1988.[41] Like Bernanke and Campbell, Warshawsky defined his market debt-asset ratios as the market value of the nonfinancial Compustat sample companies' debt (in terms of the claims on company assets of the company) divided by the market value of company equity plus debt.[42]

Warshawsky's primary sample was composed of 828 nonfinancial variously sized corporations. As shown in Figure 10, Warshawsky found that both the weighted average and the median market capitalization ratios of his sample spiked sharply in 1974. Their subsequent decline through 1983 is attributed to the rise in the stock market, while their modest rise between 1983 and 1988 is seen as rather significant in light of the period's generally vigorous stock price advances. The Fed analyst's interpretation of recent movements is rather ominous.

FIGURE 10. Capitalization Ratio - I



> Because the ratio of market to par value for bonds in 1988 was nearly identical to the market-par ratio in 1983, the overall rise in the debt-asset ratio since 1983 must have been caused by the considerable issuance

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[41] Warshawsky, Mark. *Is There a Corporate Debt Crisis? Another Look*. Federal Reserve Board Finance and Economics Discussion Series. February 1990. p. 1–10.

[42] Warshawsky formulated market debt by applying a ratio of market to par value of all corporate bonds traded on the New York Stock Exchange (NYSE) to the long-term debt of each firm used from the Compustat sample. Warshawsky notes that when tested for 12 Compustat firms, his method of calculating market debt proved to be more accurate than did the Bernanke and Campbell approach.

In talks with CRS, Warshawsky noted that the replacement value of corporate assets would have been preferred as a market-value-based asset variable. However, he pointed out that Compustat does not have such data for its sample firms, and that inflation adjusted asset data is not a standard feature of accounting practices. He also noted that during the highly inflationary 1970s, the Financial Accounting Standards Board suggested that companies "experiment" with the accounting concept of an inflation adjusted asset valuation. However, this accounting practice was never institutionalized.

of debt and retirement of equity securities through 1988. [Some companies] are operating very close to market value insolvency, which would occur when the ratio equals one.[43]

Figure 11 shows capitalization ratio trends for a subset of Compustat companies with exceptionally high capitalization ratios, that is, companies which relied on debt financing much more than a typical firm.[44] Earlier on Bernanke and Campbell also had performed a number of similar exercises to explore the hypothesis that the greatest bankruptcy risk can be found in companies with the most dependence on debt — the highest solvency ratios.[45]

FIGURE 11. Capitalization Ratio - II

Figure 11 shows that the capitalization ratio of the more leveraged companies rose through the early 1970s, then peaked about 1974. The ratio subsequently fell modestly through 1982, and then dropped severely in 1983 (the reason behind the drop is not clear). Since then, the ratio has risen modestly, and by 1988 was not appreciably greater than it had been during the latter 1970s and the early 1980s.

Warshawsky finds that the capitalization ratios

> . . . vary widely by industry with chemicals, mining, and printing and publishing showing consistently low debt-asset ratios and petroleum and natural gas, construction, transportation and utilities showing consistently high ratios. The industries exhibiting the largest increase in debt-asset ratios over the period include petroleum refining, retail, lumber and furniture, glass and concrete, apparel, and metal products.

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[43] Warshawsky, *Is There A Corporate Debt Crisis? Another Look*, p. 14.

[44] Technically, the sample consists of Compustat companies that are at the ninetieth percentile mark with respect to the capitalization ratios of overall Compustat firms.

[45] Bernanke and Campbell, *Is There A Corporate Debt Crisis*, p. 97.

> Petroleum refining and retail industries have been prominently involved in merger, restructuring and buyout activity.[46]

How risky are these recent capitalization trends identified by Warshawsky? This is a centrally important question for Warshawsky.

Subjecting the overall 1988 sample of 828 nonfinancial companies to a simulation of the 1973 to 1974 recession, Warshawsky finds that median capitalization ratios would go "... from .41 to .56 in the first recession year and to an unprecedented .68 in the second recession year. Nearly 25 percent of corporations in the sample would have debt-asset ratios exceeding one by the second recession year, indicating severe financial troubles."[47]

An attendant question is: Do the industries with higher leverage ratios tend to be at risk in the event of a business downturn? Goldman Sachs economist Robert Giordano finds that higher leveraged industries tend to be relatively stable through the business cycle, but this finding is based on an exercise with empirical limitations.[48] Mark Warshawsky, using a more empirical approach, determined that industry cyclicality did not influence industry capitalization ratios.[49]

LIQUIDITY RATIOS

Debt-equity, debt-asset and capitalization ratios are known as solvency ratios because they provide an indication of how solvent firms are, that is how readily they can meet maturing long-term financial obligations. The short-term counterpart to solvency is liquidity, that is the ability of a firm to meet current obligations from its cash position. Firms unable to meet their short-term liabilities are illiquid; however, given enough time, such companies may have sufficient assets (solvency) to change their illiquid status.

Corporate cash flow is broadly defined as cash revenue minus cash expenses and is the basic source of a firm's liquidity, i.e. its ability to meet current obligations such as interest payments. A frequently encountered liquidity ratio measures a firm's ability to meet interest payments through current cash flow. It is often depicted in two reciprocal ways: 1) as an expression of the number of times that

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[46] Warshawsky, *Is There a Corporate Debt Crisis? Another Look*, p. 15.

[47] Ibid.

[48] Giordano, Robert. Debt without Disaster. *Financial Market Perspectives*. Goldman Sachs, December 1988/January 1989. p. 6-10.

[49] Warshawsky, Is There a Corporate Debt Crisis? Another Look, p. 15. Warshawsky regressed 24 industry capitalization ratios on their profits over the 1984 to 1986 interval.

corporate cash flow exceeds interest payments, which is known as interest coverage and 2) interest payments expressed as a percentage of cash flow.[50]

In the 1980s there were an unprecedented number of very large highly leveraged corporate financial restructurings such as leveraged buyouts. (Leveraged buyouts are considered in greater detail in a later section of this study.) Many of these transactions were financed in part by commercial banks. Bank loan officers shifted their attention from the traditional asset base of the borrower — the collateral for a loan — to what one investment banker calls "cash flow loans."[51] In cash flow loans, loan officers give less emphasis to a company's current asset base in determining the amount of senior debt which can be supported, and gave greater emphasis to a company's capacity to cover interest payments with its cash flow.[52]

There is an ongoing debate over whether the interest variable in liquidity ratios should be measured in real or nominal terms. Using real interest rates would measure the actual inflation-adjusted significance of the interest burden. However, it can also be argued that since cash flow is itself measured in nominal cost terms, then the accompanying interest payment measure should also be stated without adjustment. A related view is that it is the nominal interest expense that actually matters when firms find themselves in short-term liquidity crises.[53] Moreover, companies keep their books on an historical cost basis.

LIQUIDITY RATIOS: RECENT HISTORY

FIGURE 12. uses data from the Commerce Department's Bureau of Economic Analysis (BEA) to plot one type of interest coverage ratio. The figure presents the ratio of corporate cash flow to net interest payments (the difference between interest paid and interest received) from 1970 to 1989. The cash flow series was prepared by CRS from data published by BEA as part of the national income accounts. The chart measures the number of times cash flow exceeds interest payments,

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[50] There are a number of definitions of cash flow. One commonly used definition specifies cash flow as net income (total sales minus total costs and expenses) plus depreciation (charges to a company's income from the gradual writing down of the value of depreciating fixed assets) and any other noncash charges to corporate income.

[51] Eckert, Alfred III. Recent Developments in Leveraged Buycuts. In Amihud, Yakov, ed. *Leveraged Management Buyouts*. New York, Dow Jones Irwin, 1989. p. 104.

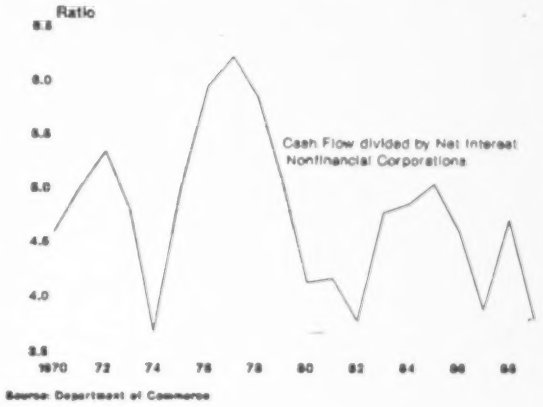
[52] Senior debt is debt that entitles its holders to priority claims on the company's assets in the event of bankruptcy.

[53] See Bernanke and Campbell, *Is There a Corporate Debt Crisis*, p. 139.

thus, the ability of the corporate sector to meet its interest payments is greater when the ratio is higher, and is reduced when the ratio drops.

Coverage ratios normally fall during the beginning phase of a recession as corporate profits plummet and cash flow sags. Figure 12 follows this pattern: the coverage ratio grew steadily following the end of a recession in 1970, fell sharply during the 1974 recession, had a strong recovery and then dropped again during the relatively mild 1980 recession, and dropped once more during the 1981-1982 recession. The downward movement at the end of the 1980s is consistent with earlier recessions.

FIGURE 12. Interest Coverage



In addition to cyclical shifts, the pattern shown in figure 12 reflects the increased debt service burden corporations face after loading up on debt. There are many applications for corporate cash flow, but paying interest usually has a high priority. For corporations, skipping interest payments is often tantamount to default, and default often leads to bankruptcy. This chart shows that in the relative prosperity of the late 1980s, the U.S. corporate sector is in as stretched out a debt service position (a ratio of 3.8), as it was in the recession year 1982 and is approaching the 3.7 ratio established in 1974.

One observer noted late in 1990 that the 1982 fall in corporate profits was mitigated by a "deceleration in interest payments brought on by lower interest rates. But, this year [1990] interest rates are much lower than they were when the last recession began, so even if interest rates do fall the impact will be less noticeable."[54]

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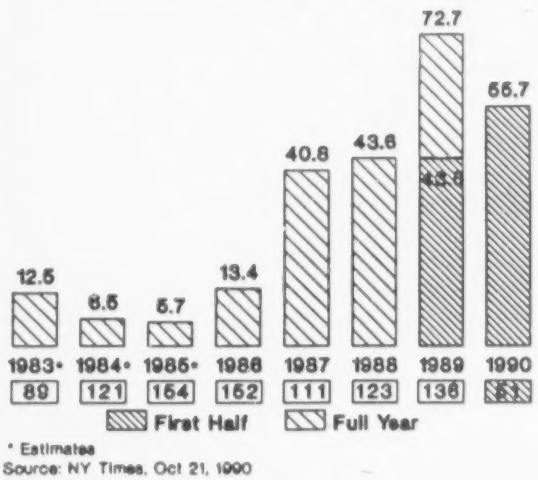
[54] Norris, Floyd. Debt Service Burden Grows. *New York Times*, September 27, 1990. p. D-12. This article also points to other indications that liquidity ratios are under exceptional strain. During the 1981-1982 recession, Department of Commerce figures show that the deepest quarterly decline in cash flow over a six-quarter period was 3.8 percent. The Department's figures also indicate that, during the 1974-1975 downturn, aggregate corporate cash flow did not fall at all. However, between the first quarter of 1989 and the second quarter of 1990, aggregate corporate cash flow dropped 10.1 percent.

CYCLICAL AND STRUCTURAL CONCERNS

Indicators of corporate solvency and liquidity — including interest-coverage ratios, certain book-value debt-equity ratios, and both market- and book-value debt-asset ratios — show that domestic corporations experienced marked increases in leverage during the latter 1980s. By some measures the expansion matched the 1970's postwar high leverage ratios; by other measures, corporate leverage surged to new postwar highs. Some studies suggest that these current debt solvency ratios are not extreme, but have simply returned to the levels that prevailed before the Second World War.[55] However, analysts generally assume, as a standard, that there is a relationship between the overall financial condition of firms and business cycles.[56]

There are a number of current indications that corporate debt may be affecting corporate viability. According to the *New York Times*, the chart in figure 13 shows the "total assets, in billions of dollars, of public companies declaring bankruptcy, annually from 1983 [through the first half of 1990]. The number of companies declaring bankruptcy each year is shown below."[57] However, bankruptcy data are available from many sources, not all of which agree. Some suggest that the number of corporate bankruptcies in 1990 lagged behind the bankruptcy pace of the mid 1980s when the industrial, farm and energy sectors were particularly distressed. However, the distinguishing feature of the present round of bankruptcies is that large companies are filing

FIGURE 13. Bankrupt Companies



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[55] See Kopcke, Richard. The Roles of Debt and Equity in Financing Corporate Investments, *New England Economic Review*, p. 39-55. One explanation: after the Great Depression, lenders set strict standards, corporate fiscal conservatism prevailed and leverage was not in fashion.

[56] See Bernanke and Campbell, Is There a Corporate Debt Crisis?, esp. p. 93-96.

[57] Bankruptcies: More Business for Speculators. *New York Times*, October 21, 1990. p. F1. The *Times* identifies "Bankruptcy Datasource" as the source of the figures.

under Chapter 11 in unprecedented numbers. Some observers cite too much corporate debt as a major cause of increases in the size of firms filing for bankruptcy.[58]

CYCLES AND LEVERAGE

Trends in corporate indebtedness are sensitive to the state of the economy. The relationship between corporate borrowing and business cycle phases has been noted often; for example, following the path from an upswing to a decline, debt financing fits into a conventional business cycle model:

> . . . capital outlays and investment in inventory tend to exceed the availability of internal financing. Debt financing increases, mostly in the form of short-term financing since interest rates are relatively high. As an economic downturn develops, internal financing available exceeds investment needs. Internal funds are available to reduce debt and in addition, longer-term debt at lower long-term rates is substituted for shorter-term liabilities.[59]

Studies of specific cycles show that corporate debt use tends to vary in a pattern similar to that of overall economic activity. Yolanda Henderson of the Federal Reserve Bank of Boston summarizes this relationship.

> Given the choice between issuing new shares and issuing new debt, corporate shareholders generally prefer to finance investment using debt, to prevent the dilution of their returns. During economic slowdowns, however, they will be more cautious in using debt because of the bankruptcy risk associated with the obligation to pay interest on a regular basis. Historical evidence supports these points. The recessions in 1970, 1974-75, and from 1980 to 1982 coincided with reduced reliance on new debt issues. The national economic expansion since 1982 has contributed to lower perceived risks, and therefore higher leverage, in keeping with the trend observed between 1961 and 1969. This explanation fits the patterns in the 1980s at least as well as any other. . . .

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[58] See Walsh, Sharon. The Bankruptcy Business Boom. *Washington Post*, June 9, 1990. p. C1, C8; and Nasar, Sylvia. Some Good News About Bankruptcies. *U.S. News & World Report*, January 15, 1990. p. 48. Large bankruptcies are widely reported and remembered; recent examples include major retailers (B. Altman, Garfinkel's), airlines (Eastern), the investment banking firm of Drexel Burnham Lambert, and a host of savings and loan associations. Yet Dun & Bradstreet reported a 13-percent drop in the number of bankruptcies in 1989, compared to 1988; see Nation Had Fewer Bankruptcies in 1989, D&B Survey Finds. *Wall Street Journal*, February 15, 1990. p. A16.

[59] Weston, J. Fred, Kwang Chung and Susan Hoag. *Mergers, Restructuring and Corporate Control*. New York, Prentice Hall, 1990. p. 128.

> The tendency for debt finance to be cyclical suggests a limit to future increases in leverage. As long as business fluctuations remain part of our economic future, it is hard to envision sustained high use of debt for many years.[60]

Few would argue against the proposition that the higher the leverage in the capital structure of a corporation, the greater is the corporate vulnerability to bankruptcy in the event of a cyclical economic downturn.[61] The argument certainly is not a complex one; its validity has been verified over and over again. As corporate sales and profits fall during a recession, cash flow also falls and those corporations which are most highly leveraged may find that they are unable to service the debt they have undertaken. Without restructuring or other bailouts, the result is widespread bankruptcy. For firms which are not overly reliant on debt financing, the impact of an economic downturn is often softened by contracyclical monetary and fiscal macroeconomic policies.

The present economic environment may restrain the relief associated with contracyclical macroeconomic policies. Wall Street economist Henry Kaufman believes that a 1990s recession will pose a difficult set of problems for policymakers, in part because of the more leveraged position of households and businesses, but also as a result of 1980s Federal Government budget decisions. Concurrent recessions in other industrial nations — a not unlikely convergence — would make matters worse.

> The legacy of the huge budgetary imbalances of the 1980s will be . . . a much slower fiscal policy response to business recessions than in the past. Consequently, the Fed will have to move to substantial monetary ease to make up for the shortfall in fiscal action if a deep economic recession is to be avoided. This means sharp and dramatic declines in interest rates, more or less regardless of whether the inflation rate is unacceptably high at the time.
>
> Keeping the next U.S. recession shallow also presupposes that the rest of the industrial world will still be in an expansion phase. That is by no means a certainty.[62]

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[60] Henderson, Is Leverage A Tax Dodge, p. 20.

[61] For a critical review of the value of economic models now in use, see Minsky, Hyman P. and Mark D. Vaughan. Debt and Business Cycles. *Business Economics*, vol. 25, no. 3, July 1990. p. 23-28; some observers feel that a slowdown in debt growth "foreshadows a sluggish economy and perhaps even . . . a recession;" see Clark, Lindley H. Jr. and Alfred L. Malabre Jr. Lightening Up; Debt Stops Surging, Easing the Pressures On Interest Rates. *Wall Street Journal*, January 3, 1990. p. A1.

[62] Kaufman, Henry. Bracing for Another Decade of Change. *American Banker*, November 28, 1989. p. 21.

UNIQUENESS OF 1980s LEVERAGE

There were some unusual structural features of the debt growth in the 1980s. For example, during periods of high real interest rates, corporate willingness to borrow is expected to decline. But corporate borrowing surged in the 1980s, in spite of relatively steep real interest rates.[63]

Before the 1980s, corporate debt expansion was mainly cyclical, usually varying with corporate spending on new plant and equipment. The 1980s were different; corporations borrowed billions largely to finance leveraged buyouts, repurchase their own stock, and mount takeovers and takeover defenses. One effect of this activity was a substantial shrinkage in corporate equity outstanding.[64]

One theoretical approach suggests that high real interest rates, combined with the capital expansion disincentives of a low rate of return on capital investment, provided the rationale for many companies to distribute excess funds to investors through various forms of debt-financed transactions including equity repurchases, leveraged buyouts and corporate acquisitions.[65] From this perspective, the corporate debt buildup of the 1980s is less of a problem in and of itself and more of a symptom of broad fiscal and credit market deficiencies.

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[63] Blair, Margaret Mendenhall. A Surprising Culprit Behind the Rush to Leverage, *The Brookings Review*, Winter, 1989/1990. p. 19-23. The real rate of interest is the current interest rate minus the anticipated inflation rate.

[64] Some economists have been critical of the failure to apply the funds raised in 1980s corporate debt issues for capital investment purposes. At a disaggregated corporate level, debt financed transactions such as the acquisition of other corporations are akin to a form of investment in plant and equipment of the acquired firm. But, at the macroeconomic level no new physical capital has been added to the economy. See Bernanke and Campbell, *Is There A Corporate Debt Crisis?*, p. 127. Evidence from empirical studies suggests that many leveraged buyouts result in operational changes that increase the market value of existent corporate capital, notwithstanding the absence of significant additional capital investment. See Garfinkel, Michelle. The Causes and Consequences of Leveraged Buyouts. (Federal Reserve Bank of St. Louis) *Review*, September/October 1989. p. 26-27.

[65] See Blair, A Surprising Culprit Behind the Rush to Leverage, p. 19-23. Blair explains that companies may have found it cheaper to redistribute their cash through pretax interest payments rather than aftertax dividend payments. Blair's theory does not appear to fully consider incumbent corporate shareholders and bondholders who may experience reduced wealth effects in cash redistributing transactions such as leveraged buyouts (bondholders) and acquisitions of other companies (shareholders of the acquiring company). See A Big Event for American Bonds. *The Economist*, October 29, 1989. p. 81; and Weston et al., Mergers, Restructuring and Corporate Control, p. 259-260.

Richard Kopcke writes:

> . . . in some circumstances, rising indebtedness may be a symptom of deteriorating incentives for capital investment or of defects in credit markets. Policies that attempt to cure the symptom rather than the underlying problems may be ineffective.[66]

Margaret Blair observes:

> . . . corporate restructuring and the rush to leverage can be viewed as another symptom of the widespread shift in the U.S. economy of the 1980s away from savings and toward debt-financed consumption.
>
> Policies designed to stifle, or control, or otherwise regulate leverage-driven takeovers or other forms of restructuring must also address this underlying problem or they are likely to do more harm than good.
>
> Probably the single most important thing policymakers can do to improve investment incentives is to act to reduce the real interest rates, which will, in turn, bring down the "hurdle rate" that new investments must satisfy to be worth undertaking. And real interest rates can be reduced without sparking inflation only by bringing down government budget deficits and encouraging private savings.[67]

Economists have conducted simulation studies based on the pattern of the most recent economic recessions and current levels of corporate debt as one way to test the potential impact of a recession. Mark Warshawsky found that a recession, à la the 1981-82 experience, would result in financial distress for eight percent of the corporations in his sample. In the case of a relatively harsher recession, similar to the 1973-74 occurrence, the unpleasant results would be more widespread: "If a severe recession were to hit, as many as 25 percent of corporations, corresponding to as much as 16 percent of total corporate assets, would be placed in severe financial straits, given the financial structure extant in 1988."[68]

More and more companies may (or may not) be overleveraged, and overleveraged firms may be more likely to default on their obligations. But default does not necessarily mean bankruptcy; firms in financial distress, and their creditors, may find that restructuring a firm through private negotiation is more desirable than going through the Chapter 11 bankruptcy process. Preliminary results of a recent empirical study promote this view.

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[66] Kopcke, The Roles of Debt and Equity in Financing Corporate Investments, p. 47.

[67] Blair, A Surprising Culprit Behind the Rush to Leverage, p. 26.

[68] Warshawsky, *Is There a Corporate Debt Crisis? Another Look*, p. 23.

> In this study we investigate how financially distressed firms restructure their debt. For a sample of 169 distressed companies, we investigate firms' economic incentives to choose between private renegotiation and formal bankruptcy as alternative mechanisms for dealing with default. In about half of all cases, financially distressed firms successfully restructure their debt outside of Chapter 11. Evidence shows that financial distress is more likely to be resolved through private renegotiation when more of the firm's assets are intangible, and relatively more debt is owed to banks; private renegotiation is less likely to succeed when there are more distinct classes of debt outstanding. . . . The present study finds that insolvent firms with relatively high going concern value are more likely to restructure their debt privately, because more of this value tends to be lost through asset sales when debt is reorganized in Chapter 11. Thus, future defaults by the current generation of highly levered companies may be increasingly resolved through private renegotiation.[69]

At least one authority on financial markets has suggested that the issue of the relationship between high levels of corporate debt and macroeconomic policy can be ignored; according to Harvard Professor Lawrence Summers:

> Corporate debt is to national economic policy about what disputes with Norway over fishing rights are to foreign policy. There is no apparent way to solve the problem, but it is not a very important one.[70]

Financial economist Henry Kaufman supports the view that recent corporate debt growth foreshadows profound structural changes in the U.S. corporations. In addition to the cyclical warning noted above, Kaufman is not sanguine on the probable consequences of these structural developments:

> As corporations become more leveraged over time, there's bound to develop a more intimate relationship between the debtor corporation and the creditor institution. Eventually the financial institutions will have a much greater say-so as to who is going to be in senior management, product development, research and so on. . . . This eventually leads to what I call social democracy because it leads to greater concentration of economic and business and financial assets. And [it] decreases ultimately the competitive setting in a society . . . . There is a certain amount of growth that we would ultimately lose.[71]

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[69] Gilson, Stuart C., Kose John, and Larry H.P. Lang. *Troubled Debt Restructurings; An Empirical Study of Private Reorganization of Firms in Default.* May 1990 (Duplicated). p. 32, 33.

[70] Comments and Discussion re Is There a Corporate Debt Crisis?, *Brookings Papers on Economic Activity*, 1988, no. 1, p. 131.

[71] Dobrzynski, Judith. Henry Kaufman: Corporate Debt Erodes Competition. *Business Week*, March 20, 1990. p. 40.

LEVERAGED BUYOUTS (LBOs)

A leveraged buyout (LBO) refers to the takeover of a company, using borrowed funds. Most often, the target company's assets serve as security for the loans taken out by the acquiring firm, which repays the loans out of cash flow of the acquired company. In the process, publicly held shares are redeemed by the corporation, and the firm's balance sheet is transformed, reflecting the overwhelming reliance on debt financing after the LBO. This type of restructuring — especially when financed by high yield corporate debt (junk bonds) — was increasingly common in the 1980s, was frequently deplored, and was often investigated by Congress.

Because interest payments on the newly acquired corporate debt in an LBO are paid before calculations of tax liability, some critics assert that LBOs are subsidized by taxpayers. However, some studies of the relationship between LBOs and tax revenues find it unlikely that LBOs result in net losses of tax revenues to the U.S. Treasury.[72] A different perspective which considers that "the right question about tax subsidies to LBO's is whether the tax system tips the balance in favor of an LBO that would otherwise be marginally profitable" finds that LBOs are tax subsidized.[73] Some analysts contend that LBOs are just a corporate tool used to adjust the mix of debt and equity in a company's capital structure and should be left alone.[74]

Opponents and supporters of LBOs are heard from in the following pages; after these comments, agency costs and the free cash-flow explanation of the LBO phenomenon are considered.

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[72] See, for example, U.S. Library of Congress. Congressional Research Service. *Tax Aspects of Leveraged Buyouts*. March 2, 1989. CRS Report 89-142 RCO, by Gravelle, Jane G. Washington, 1989. 11 p.; and Jensen, Michael C., Steven Kaplan, and Laura Stiglin. Effects of LBOs on Tax Revenues of the U.S. Treasury. *Tax Notes*, v. 42, February 6, 1989. p. 727-733.

[73] Bulow, Jeremy I., Lawrence H. Summers, and Victoria P. Summers. *Distinguishing Debt From Equity in the Junk Bond Era*. Harvard Institute of Economic Research. Discussion Paper Number 1489. June 1990. p. 18. Hayne Leland has argued that "most of the increased value associated with LBOs comes from the tax advantage of greater leverage. In the case of RJR-Nabisco, tax benefits accounted for 80% of the premiums paid to shareholders." Leland, Hayne E. LBOs and Taxes: No One to Blame But Ourselves. *California Management Review*, v. 32, no. 1, Fall 1989. p. 26.

[74] Adler, Barry E. and Larry E. Ribstein. *Debt, Leveraged Buyouts, and Corporate Governance*. Washington, Cato Institute, 1989. 27 p. (Cato policy analysis no. 120)

THEY'RE BAD/THEY'RE NOT BAD

There is, as yet, no definitive evaluation of LBOs. They have their critics, and they have their champions. Among the critics are Walter Adams and James Brock; they provide a list of what they refer to as "nettlesome issues" which remain "whatever the verisimilitude" of the claims made by LBO supporters.[75] The issues are posed as questions to which they respond negatively.

- Do stockholders get a fair price? In the example cited, no.
- Are the architects of a management buyout likely to be fair? Not usually.
- What about bondholders? LBOs lower the value of existing bonds.
- What about the effects of leveraging on the balance sheet of the new company sired by the LBO? What are the consequences of the extraordinary insouciance with which debt is substituted for equity? Leveraging is not for the faint of heart; it is a game of Russian roulette.
- Does a leveraged buyout protect management from the constant pressure of shareholders and the investment community to increase the market value of the corporation's stock? Does the LBO therefore liberate management to concentrate on decisions that will produce long-run benefits to the company? Or does the highly leveraged buyout, and the defensive responses to it, force companies to focus on the short-term bottom line rather than on capital investment or long-term planning, research, and development? The matter is the subject of lively dispute among corporate executives.
- Are LBOs nothing more than a tax play? Many LBO companies are so highly leveraged that they have no tax obligation at all for several years after the buyout; indeed, under the carryback provisions of the tax code, they may be eligible for a refund on the income taxes they paid in the years preceding the buyout.
- Finally, why put together what is shortly thereafter put asunder? This is the "Humpty-Dumpty" problem. It raises the fundamental question whether playing the acquisition-buyout game benefits the U.S. economy.

The deals discussed by Adams and Brock involve the restructuring of very large — usually multibillion dollar — corporations. In 1989 testimony before the House Ways and Means Committee, Secretary of the Treasury Nicholas F. Brady stressed the uniqueness of individual deals and the dangers of generalizing.

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[75] Adams, Walter and James W. Brock. *Dangerous Pursuits; Mergers and Acquisitions in the Age of Wall Street*. New York, Pantheon Books. 1989. The material which follows is repeated verbatim, or paraphrases material on pages 52 to 56 of Adams and Brock.

> Ultimately, however, the significance of corporate leverage is a question of individual corporations' capacity to service their debt. Aggregate data concerning debt ratios reflect averages. And just as one may drown in water that averages two feet deep, average debt ratios cannot answer whether there are significant individual situations of dangerous overleverage. It is important to know whether individual cases of extreme leverage are isolated, and perhaps attributable to special circumstances, or reflect instead an accelerating trend in American industry.
>
> Data addressing these and related questions is [sic] being developed at Treasury and by some in the private sector. We should recognize, however, that past experience is not a particularly good measure of the future prospects for a highly leveraged corporation.[76]

The strongest defense of leveraged buyouts is treated separately in the next subsection, under the title of agency costs/free cash-flow theory. Other commentators have argued against criticisms of LBOs. For example, Michelle Garfinkel considers the assertion that the profits realized by shareholders are gained at taxpayers' expense; she notes that there is no evidence that the overall effect of LBOs is negative.

> Regardless of the issues related to the fairness of the tax system, the critical economic issue for public policy toward LBOs is whether the net effect on social wealth is negative. But, for example, even if LBOs had no effect on the firm's performance, the *net* effect of LBO activity on tax revenues is unlikely to be negative. While the tax liability of the target firm falls with increased leveraging, that of the shareholders realizing capital gains and new bondholders increases. Moreover, the evidence that the tax benefits do not fully explain the observed gains to shareholders suggests that the gains to shareholders do not simply come at the expense of taxpayers. Thus, the argument that the gains to shareholders are offset by losses to taxpayers ignores the future increased tax base resulting from the LBO's predicted effect on the firm's productivity. If LBOs enhance the firm's performance, then income subject to taxation would increase later; increased future tax revenues would offset partially, if not fully, the loss in tax revenues now due to the use of debt finance in the LBO transaction.[77]

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[76] U.S. Congress. House. Committee on Ways and Means. *Tax Policy Aspects of Mergers and Acquisitions*. Hearings, January 31; February 1, 2; March 14, 15 1989. 101st Congress, 1st Session. Washington, G.P.O. 1989. (Part I, Serial 101-10). p. 13.

[77] Garfinkel, The Causes and Consequences of Leveraged Buyouts, p. 30-31. Footnote in the original omitted.

AGENCY COSTS/FREE CASH-FLOW

What happens when a successful corporation generates more cash flow than it can profitably invest? Ideally, the managers of the corporation, as agents for the owner-shareholders, would distribute the funds as dividends to the firm's shareholders. This is most likely to occur when managers have a large equity stake in the corporation. But, in many instances, management has little if any ownership and may be motivated tc use these "extra" funds for spending on inefficient investment projects. Michael Jensen has emphasized the usefulness of debt in improving the efficiency of managers and their organizations.

> Managers are the agents of shareholders, and because both parties are self-interested, there are serious conflicts between them over the choice of the best corporate strategy. Agency costs are the total costs that arise in such arrangements. They consist of the costs of monitoring and bonding managerial behavior (such as the costs of producing audited financial statements and devising and implementing compensation plans that reward managers for actions that increase investors' wealth) and the efficiency losses that are incurred because the conflicts of interest can never be resolved perfectly. When these costs are large, the threat or actuality of takeovers can reduce them.
>
> Free cash flow is cash flow in excess of that required to fund all of a firm's projects that have positive net present values when discounted at the relevant cost of capital. Such free cash flow must be paid out to shareholders if the firm is to be efficient and to maximize value for shareholders.[78]

For a company relying primarily on equity funding, managers may choose to distribute the free cash flow as dividends, or to reinvest it in the firm. A highly leveraged company has no such option: the free cash flow has to be distributed as interest payments to the firm's creditors. The possibility of default and the potential for bankruptcy operate to discipline management; thus, leveraged buyouts and similar corporate restructurings can be credited with improving operating efficiency, employee productivity and shareholder value.

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[78] Jensen, Michael C. Takeovers: Their Causes and Consequences. *Journal of Economic Perspectives*, v. 2, no. 1, Winter 1988. p. 28. Jensen has written extensively on the subject; see, for example: Eclipse of the Public Corporation. *Harvard Business Review*, v. 67, September-October 1989. p. 61-74; The Distribution of Power Among Corporate Managers, Shareholders, and Directors. *Journal of Financial Economics*, v. 20, January-March 1988. p. 3-24. (with Jerold B. Warner); Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers. *American Economic Review*, v. 76, May 1986. p. 323-329; and The Takeover Controversy: Analysis and Evidence, p. 314-354 in Coffee, John C. Jr., Louis Lowenstein, and Susan Rose-Ackerman, eds. *Knights, Raiders, and Targets; The Impact of the Hostile Takeover*, New York, Oxford University Press, 1988.

A 1989 study calls Jensen's theory "perhaps the most prominent explanation for the trend to leverage." The authors attribute the prominence in part to insight into the relative recent rise in leverage: high cash flow occurs primarily in mature industries, and "the maturing of American industry in the post-war era began only over the last decade."[79] Arguments favoring Jensen's hypothesis are included in an empirical study indicating that the level of debt in a corporation decreases as the level of managerial shareholding increases.[80] Another empirical inquiry finds that "the evidence on the free cash flow theory is mixed" and that it "might be relevant" in the case of LBOs, "although the evidence is not compelling."[81]

One analyst considers Jensen's arguments and points out that

> . . . the control function of debt and free cash flow are both about the incentives of managers and the way organizations tend to behave. As such, they should have been equally true in past decades. Thus, they don't completely explain why restructuring is happening in the 1980s.[82]

James Coffee's critique of the free cash-flow argument focuses on shareholder motivation rather than management motivation; it starts with the assumption that shareholders of a highly leveraged firm will have a preference for high-risk corporate strategies.

> This is because the greater the degree of leverage, the more the downside risk falls not on shareholders, but on the firm's creditors. As the residual claimant, the shareholders receive all the upside return; but because they have limited liability, they can avoid downside loss, except to the extent their capital is invested in the firm. Thus, the higher the degree of leverage, the less capital they have at risk and the more they would be attracted by high-variance [i.e., high-risk] investments or policies in which they receive the full upside return.
>
> In this light, the claim made by Professor Jensen and others that higher leverage is simply a bonding device by which management assures the capital market that it will subject itself to the discipline of the market's

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[79] Gertler, Mark and Glenn R. Hubbard. *Taxation, Corporate Capital Structure, and Financial Distress*. Cambridge, Mass., National Bureau of Economic Research, 1989. (Working paper no. 3202) p. 7.

[80] Friend, Irwin and Larry H. P. Lang. An Empirical Test of the Impact of Managerial Self-Interest on Corporate Capital Structure. *Journal of Finance*, v. 43, no. 2, June 1988. p. 271-281.

[81] Bhagat, Sanjai, Andrei Shleifer, and Robert W. Vishny. Hostile Takeovers in the 1980s: The Return to Corporate Speculation. *Brookings Papers on Economic Activity*, Microeconomics 1990, p. 54.

[82] Blair, A Surprising Culprit Behind the Rush to Leverage, p. 20.

judgment misses a critical point: As leverage is increased, shareholders' attitudes do not remain static. Rather, shareholders would come to favor higher-risk policies and would pressure management in that direction.[83]

So long as attitudes, and the relative resistance to pressure of managers, shareholders, and creditors are important factors in the resolution of conflicting goals, firm conclusions will remain elusive. Whatever explanation is in vogue, issuers and holders of corporate debt have been affected by LBOs.[84]

INDUSTRY DIFFERENCES

Why debt ratios vary widely among industries is an issue closely related to the question of how capital structures are determined.[85] Most analysts considering corporate debt levels for different industries have commented on the effect of the tax code on an industry's debt level. A recent example is a study by Yolanda Henderson, an economist at the Federal Reserve Bank of Boston. Focusing on provisions in the Tax Reform Act of 1986 (TRA) which increased capital gains taxes, Henderson contends that the tax change led to an increase in the cost of capital and worked to discourage capital formation. A special feature of the Henderson study is consideration of the TRA effect on the costs of capital for corporations at different stages of development. A summary of the article includes the following comments.

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[83] Coffee, John C. Jr. Shareholders Versus Managers: The Strain in the Corporate Web; in Coffee, John C. Jr., Louis Lowenstein, and Susan Rose-Ackerman, eds. *Knights, Raiders, and Targets; The Impact of the Hostile Takeover*, New York, Oxford University Press, 1988. p. 103.

[84] Holders of corporate bonds outstanding before a leveraged buyout usually experience a decline in the value of their holdings, and some are seeking relief in the courts. See Wayne, Leslie. RJR Nabisco's Disgruntled Bondholders. *New York Times*, May 20, 1990. p. F15. After balance sheet restructuring, in cases where the number of bondholders drops below 300, companies may cease disclosing financial information; the absence of such information adversely affects a security's marketability. See Schultz, Abby. Bondholders Mobilizing to Change "300 Rule." *Investment Dealers' Digest*, July 30, 1990. p. 32. Sellers of stock, lenders, investment bankers and others involved in an LBO may be adversely affected after the LBO if the restructured company becomes insolvent; see Michel, Allen and Israel Shaked. The LBO Nightmare: Fraudulent Conveyance Risk. *Financial Analysts Journal*, March/April 1990. p. 41-50.

[85] For an introduction to this topic see Meyers, Stewart C. Still Searching for Optimal Capital Structure, p. 80-95 in Kopcke and Rosengren, *Are the Distinctions Between Debt and Equity Disappearing?* Meyers suggests that "for an extensive survey and bibliography" the reader should consult Masulis, Ronald W. *The Debt/Equity Choice*. Cambridge, Mass., Ballinger Pub. Co, 1988. xi, 141 p.

> Any increase in the cost of equity funds is likely to impose a disproportionate burden on emerging corporations, discouraging their growth. The typical young corporation finances a lower proportion of its assets by issuing debt, and has a lower debt-to-equity ratio, than does the typical mature corporation. This comparison is especially sharp in the services sector. Technology-oriented companies also have particularly low access to debt. Although economists disagree on exactly how capital gains taxes and dividend taxes affect the cost of equity, and therefore on whether equity is more expensive for emerging than for mature corporations, they generally recognize capital gains taxes as a significant element of this cost. Furthermore, recent research indicates that a lack of internally generated funds serves as a constraint on investment beyond what an analysis based solely on tax policy would indicate. Young corporations' need to issue new shares hampers their capital expansion plans.
>
> The cost of funds—both equity and debt—depends on whether investors and creditors are subject to taxation on their income. Mature corporations have relatively greater access to untaxed institutional investors such as pension funds, and therefore can afford to undertake investments with pretax returns lower than those undertaken by emerging corporations. Investors in young corporations are more likely to be individuals subject to capital gains taxes.
>
> Finally, these financial distinctions between emerging and mature corporations are more important than distinctions based on production activity. Differences in the reliance on equipment as opposed to structures are not particularly striking between high-technology businesses and others, and any existing differences were mitigated by the Tax Reform Act of 1986.[86]

In testimony prepared for March 1990 hearings by the House Committee on Ways and Means, representatives of the American Council for Capital Formation (ACCF) argued that the Tax Reform Act of 1986 (TRA) had adverse effects on the cost of capital for emerging corporations. Citing research by Dr. Yolanda Henderson of the Boston Federal Reserve Bank, the ACCF asserted that

> small firms, particularly high-tech companies, have limited access to debt, in contrast to larger firms. For example, long-term debt-to-equity ratios for mature corporations average 42 percent in manufacturing and 107 percent in services, with other industries falling in between (see table 1).

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[86] Henderson, Yolanda K. Capital Gains Taxation and the Cost of Capital for Mature and Emerging Corporations. Prepared for the American Council for Capital Formation Conference on Saving — The Challenge for the U.S. Economy. October 11-13, 1989. (Duplicated) p. 43-44.

TABLE 1. Long-Term Debt-To-Equity Ratios for Mature and Emerging Corporations by Industry, 1986[a]
(percent)

		Emerging		Sample Size (Number of Companies)	
	Mature	Mean	Median	Mature	Emerging
Total Nonfinancial	58.6	122.5	22.2	422	210
Manufacturing	42.4	115.3	20.1	245	86
Food and Tobacco	62.3	86.1	17.3	93	5
Chemicals	43.4	64.7	2.3	137	10
Industrial and Computing Equipment	30.1	37.9	9.3	224	8
Electronic Equipment	26.8	39.8	16.7	123	17
Measuring Instruments	25.9	91.6	5.1	99	9
Miscellaneous Manufacturing	48.5	112.6	2.8	41	7
All Other Manufacturing	47.8	213.3	49.6	528	30
High-Technology Industries[b]	N.A.	43.9	6.1	N.A.	37
Non High-Technology Industries	N.A.	165.1	43.7	N.A.	53
Transportation, Communication, Utilities	82.6	241.9	80.5	370	21
Wholesale Trade	67.6	348.4	39.2	153	14
Retail Trade	76.5	89.2	43.6	291	26
Services	106.8	42.9	16.3	249	60
Technology-Oriented Industries[c]	N.A.	39.6	13.5	N.A.	40
Non Technology-Oriented Industries	N.A.	49.3	19.4	N.A.	20

[a] For mature corporations, the ratios are value-weighted means. Bernanke and Campbell (1988) indicate that means and medians are similar in the Compustat sample. For emerging corporations, they are means and medians of ratios for individual companies averaged before and after their initial public stock offering. Observations are omitted if equity is negative. Individual industries are shown separately if there are shown separately if there are at least six observations of companies going public in 1986. All ratios are book values.

[b] SIC [standard industrial classification] codes 283 (drugs), 286 (industrial organic chemicals), 357 (office and computing equipment), 366 (communications equipment), 367 (electronic components), 372 (aircraft), 376 (missiles), 380 (instruments). Definition from U.S. Congressional Budget Office (1985).

[c] SIC codes 737 (computers and data processing), 7389-7399 (business services), 805-809 (health services), 8731 (commercial physical research), 8734 (testing laboratories).

Source: Compustat Industry Aggregate Database and *Going Public: The IPO Reporter* in Bloomfield, Mark A. and Margo Thorning. U.S. Tax Policy Has Contributed to Higher Capital Costs. Congressional Testimony prepared for March 5, 1990, hearing of the House Ways and Means Committee on the impact, effectiveness, and fairness of the Tax Reform Act of 1986. American Council for Capital Formation, March 1990. p. 11.

> For emerging firms, the median value of debt to equity confirms the findings of usage of debt: The ratio is 20 percent in manufacturing and 16 percent in services. The median debt-equity ratio of high-tech service firms is only 13.5 percent. The median values of debt to equity, which mark the division between the bottom and top halves of the sample, are a better indicator for the typical emerging company in each industry.[87]

The data accompanying and supporting this argument are in the table which follows. Simply stated, the argument seems to be that most new companies rely more heavily on equity financing than on debt financing, and so have a lower debt-to-equity ratio than mature companies; this reliance on equity is intensified for emerging high-technology companies. In the context of relatively favorable tax treatment of debt financing, the ACCF position suggests that the corporate tax structure is limiting the growth and competitiveness of domestic firms, especially high-technology ones.

The question of what is the optimal capital structure for a firm has not yet been fully answered. Still, research concerned with the optimal capital structure interprets measures of corporate capital structure similar to those used by ACCF from a different point of view. A recent academic study included the following in its summary:

> While our results are not conclusive, they serve to document empirical regularities that are consistent with existing theory. In particular, we find that debt levels are negatively related to the "uniqueness" of a firm's line of business. This evidence is consistent with the implications of [earlier research] that firms that can potentially impose high costs on their customers, workers, and suppliers in the event of liquidation have lower debt ratios.
>
> The results also indicate that transaction costs may be an important determinant of capital structure choice. Short-term debt ratios were shown to be negatively related to firm size, possibly reflecting the relatively high transaction costs small firms face when issuing long-term financial instruments.[88]

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[87] Bloomfield, Mark A. and Margo Thorning. U.S. Tax Policy Has Contributed to Higher Capital Costs. Congressional Testimony prepared for March 5, 1990 hearing of the House Ways and Means Committee on the impact, effectiveness, and fairness of the Tax Reform Act of 1986. American Council for Capital Formation, March 1990. p. 10.

[88] Titman, Sheridan and Roberto Wessels. The Determinants of Capital Structure Choice. *Journal of Finance*, v. 43, no. 1, March 1988. p. 17.

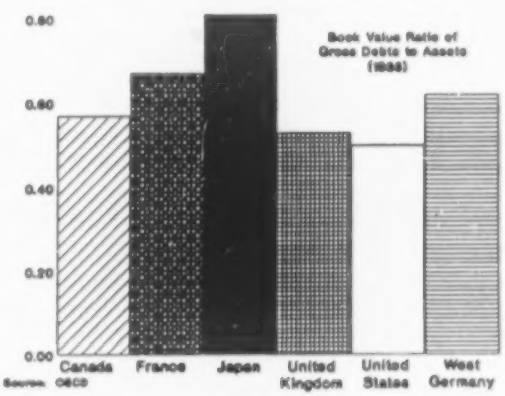
FOREIGN COMPETITION

Some have argued that U.S. taxes increase the cost of capital and place domestic firms at a competitive disadvantage with respect to foreign competitors. This contention is not widely accepted by economists; economic theory questions the merits of trying to effect international competiveness with tax policy.[89] Nevertheless, in their search for a route to lower capital costs, some policymakers concerned with the global competitive position of American firms have called attention to the role of corporate debt.

To shed some light on the question, this section of the report includes three measures relevant to the competitiveness issue: figure 14 shows corporate debt-to-asset ratios for the United States and five other industrialized countries; figure 15 compares U.S. and Japanese equity-to-capitalization ratios for seven manufacturing industries; and, for 1977 to 1988, table 2 shows the cost of capital for various projects, including plant and equipment in the United States and three other industrialized countries.

Figure 14 compares book value denominated gross debt-to-asset ratios of U.S. nonfinancial firms with similar companies in five other major industrialized nations: Canada, France, Japan, the United Kingdom, and West Germany. The United States has the lowest debt/asset ratio of all. There is a widespread perception that Japanese and West German firms are "encouraged" to have relatively high leverage ratios because of a greater dependence on loans from banks that are often shareholders. Some observers reason that the shareholder role reduces the

FIGURE 14. International Debt-Asset-Ratios



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[89] International competitiveness is generally treated as a trade issue; for a study on the relationship between U.S. tax policy and international competitiveness, see U.S. Library of Congress. Congressional Research Service. *Tax Policy and U.S. Trade Performance*. Report No. 89-635 E by Gregg A. Esenwein and G. Thomas Woodward. Washington, 1989. p. 12. For a consideration of how foreign and U.S. taxes affect the competitiveness of the U.S. banking industry, see p. 39-51 of U.S. Library of Congress. Congressional Research Service. *U.S Banks In The Global Economy: Effects of Capital, Tax, And Regulatory Requirements*. Report No. 90-293 E by Walter W. Eubanks, William Jackson, David L. Brumbaugh, and James M. Bickley. Washington, 1990. p. 54.

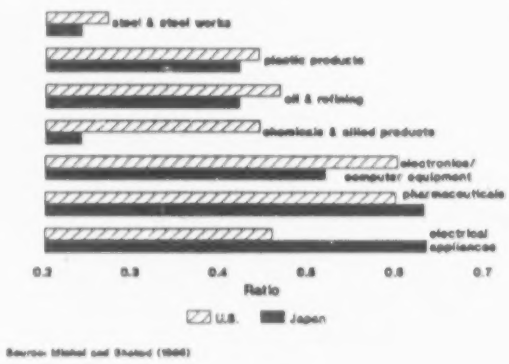
conventional conflicts between the lender and the loan recipient, thus allowing for less conservative lending policies.

A caveat is in order. The variation in the ratios in figure 14 may be somewhat dependent on differences that exist between national accounting standards. Attempts have been made to correct for these differences, e.g., by using leverage ratios based on market values. Some studies that used this latter approach found that when market value based leverage ratios are used, U.S. firms do not appear to be significantly underleveraged relative to other major industrial nations.[90]

Figure 15 illustrates the results of a study of 130 industry-matched American and Japanese firms (10 industries, each with 13 firms for each country).[91] Based on five years of data (1977 to 1981), the study conceded that Japanese firms appear more highly leveraged than American firms using capitalization ratios based on the book value of equity. However, when capitalization ratios based on the market value of equity were used the differences disappeared: "High Japanese leverage appears to be more myth than reality."[92]

The findings in figure 14 are apparently contradicted by the data in figure 15. For five of the seven industries in the chart, U.S. companies are more highly leveraged than their Japanese counterparts. Pharmaceuticals and electric appliances are the exceptions, where Japanese firms are more leveraged. These anomalous results underscore the need for great caution in the choice and the interpretation of comparative international leverage ratio data. The various methodological problems and limitations associated with domestic corporate leverage data may be exacerbated when leverage ratios are international.

FIGURE 15. Industry Comparisons
Debt-Asset Ratios



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[90] See Ellsworth, Richard. Capital Markets and Competitive Decline. *Harvard Business Review*, November/December 1985. p. 171-183; Paulus, John. Corporate Restructuring "Junk" and Leverage: Too Much or Too Little? *Morgan Stanley Economic Perspectives*, March 1986, p. 1-21. Michel, Allen and Israel Shaked. Japanese Leverage: Myth or Reality? *Financial Analysts' Journal*, July/August 1985. p. 61-66.

[91] Michel and Shaked, Japanese Leverage: Myth or Reality?, p. 61-66.

[92] Ibid. p. 66.

A recent empirical study prepared at the Federal Reserve Bank of New York rejects the idea of a relationship between income taxes and the cost of capital. Robert N. McCauley and Steven A. Zimmer, analysts at the New York Fed, provide comparisons of capital cost for five different types of capital projects in the United States, Japan, Germany, and the United Kingdom for 1977-1988. The authors give a capsule summary of their measurement:

> The appropriate hurdle for an investment project to clear is the cost of capital, the real pre-tax rate of return that covers both the company's after-tax cost of funds and its tax obligations. The cost of capital is satisfied when revenues cover (1) the cost of equity as weighted by equity's share in the capital structure, (2) the effective cost of debt as weighted by the debt share, and (3) income taxes, taking into account the tax value of any investment tax credit and depreciation allowance and discounting by the after-tax cost of funds.[93]

The findings, detailed in the table below, generally show the United States at a competitive disadvantage relative to other major industrial countries. The calculations show the United States as having the highest real after-tax cost of funds.

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[93] McCauley, Robert N. and Steven A. Zimmer. Explaining International Differences in the Cost of Capital. *(FRBNY) Quarterly Review*, Summer 1989, p. 15. The authors provide details on the method used to calculate the cost of capital in an appendix to their article.

TABLE 2: Cost of Capital for Various Projects
(Required Rate of Return on an Investment)

Equipment and machinery with physical life of 20 years

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
United States	11.2	11.7	11.2	11.5	13.5	11.5	10.6	11.3	11.1	9.1	10.2	11.2
Japan	5.9	6.9	7.6	8.8	8.8	8.5	8.8	8.4	8.3	7.8	7.0	7.2
Germany	7.7	7.3	7.5	8.6	8.8	7.8	7.0	7.2	7.1	6.9	7.0	7.0
United Kingdom	8.8	10.8	9.8	12.7	10.3	10.7	10.8	9.3	9.4	7.8	8.2	9.2

Factory with physical life of 40 years

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
United States	10.0	10.4	8.9	9.3	10.1	12.4	10.8	12.8	12.6	9.3	9.0	10.2
Japan	2.8	4.2	5.1	6.2	6.8	6.6	7.0	6.3	6.1	5.8	4.8	5.0
Germany	5.5	5.5	5.6	7.0	7.4	6.3	5.4	5.7	5.5	5.2	5.4	5.4
United Kingdom	6.7	9.9	7.8	12.2	7.7	8.7	8.8	7.6	8.3	6.1	6.6	7.9

Research and development project with 10 year payoff lag

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
United States	12.5	12.9	11.9	12.4	8.3	18.4	15.2	20.3	20.2	16.8	18.2	20.3
Japan	3.9	5.7	6.5	7.3	8.0	8.3	8.7	7.7	9.2	9.4	8.4	8.7
Germany	13.4	13.8	13.3	15.6	15.7	14.7	13.9	14.6	13.9	13.2	14.4	14.8
United Kingdom	18.2	28.4	21.1	33.4	24.2	29.5	29.2	24.4	25.4	18.9	20.6	23.7

Expensed item with physical life of 3 years

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
United States	39.5	40.6	42.4	43.3	38.5	40.5	39.3	39.6	39.1	36.7	39.4	40.4
Japan	35.0	35.1	35.4	36.4	36.1	36.0	36.0	35.7	35.6	35.3	34.8	34.9
Germany	34.7	34.7	34.7	35.4	35.6	35.1	34.7	34.8	34.8	34.6	34.7	34.8
United Kingdom	39.4	40.6	41.4	42.5	40.5	40.0	39.6	38.4	37.7	36.1	37.0	37.4

Land

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
United States	10.5	11.1	8.6	9.6	12.6	15.3	12.5	16.1	15.8	10.4	9.3	10.6
Japan	-5.6	1.3	3.2	4.4	7.0	7.8	8.4	6.6	6.0	6.5	4.8	5.4
Germany	3.1	3.7	3.0	5.5	5.6	4.6	3.7	4.6	3.8	3.0	4.3	4.7
United Kingdom	6.8	14.2	9.6	17.8	11.7	14.6	12.5	9.7	9.2	5.4	6.2	7.7

Source: FRBNY staff estimates, in McCauley, Robert N. and Steven A. Zimmer. Explaining International Differences in the Cost of Capital. *(FRBNY) Quarterly Review*, Summer 1989, p. 16.

Why are there such dramatic differences in the cost of capital? McCauley and Zimmer suggest the following array:

> Possible explanations of the gap in the cost of capital fall into four broad categories: (1) corporate and personal income tax structures; (2) factors affecting personal savings efforts, especially the rates of return required by households and the rationing of credit; (3) macroeconomic stability; and (4) capital structure permitted by relations among corporations, banks, and governments. We reject the first explanation and accept the others with varying confidence.[94]

McCauley and Zimmer's rejection of an explanatory role for income tax is noteworthy because it runs counter to other observations. Witnesses at hearings held in 1989 by the House Ways and Means Committee were asked to comment on legislative options; the first option noted by the Committee would have denied interest deductions on certain debt used to fund a hostile takeover, and other proposals included changes in the tax treatment of corporate interest payments when foreign entities were involved.[95] A Treasury spokesman cautioned that a reduction in the interest deducted by corporations would raise the cost of capital for U.S. corporations and "hinder the ability of U.S. corporations to compete in the global marketplace."[96] Similar sentiment was expressed by SEC Chairman Breeden in a letter to Senator Riegle:

> Your observations concerning the replacement of equity by debt in leveraged transactions also highlight a significant issue for further consideration. I certainly hope to see U.S. firms have stronger equity capital bases in the future as a means of, among other things, increasing the "staying power" of U.S. firms in global competition.[97]

These reservations and other expressions of concern over any change that might adversely affect the capital cost position of the United States relative to other nations indicate that the estimates made by McCauley and Zimmer accurately reflect the understanding of corporate and government decision makers. Addressing the possibility of putting debt and equity on a more equal footing, Mark Gertler and R. Glenn Hubbard consider some effects of removing the tax deductibility of interest.

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[94] Ibid. p. 16.

[95] U.S. Congress. House. Committee on Ways and Means. *Tax Policy Aspects of Mergers and Acquisitions*. Hearings, 101st Congress, 1st session. Part II. May 16 and 17, 1989. Washington, G.P.O., 1989. p. 3, 6-7. (Serial 101-42)

[96] Ibid. p. 35.

[97] March 15, 1990 letter: Breeden, Richard C., Chairman, Securities and Exchange Commission to Senator Donald W. Riegle, Jr., Chairman, Senate Committee on Banking, Housing, and Urban Affairs.

> This action, however, would raise the cost of capital to corporations; and it would also confer an advantage on foreign investors in the market for corporate control in the U.S. The latter is true because foreign investors avoid capital gains taxes in the U.S. and may not pay taxes on their U.S. income in their home country (if they are subject to a territorial tax system).[98]

Other analysts point out that a tax change which adversely affected debt issuance would favor foreign purchasers of U.S. firms.

> All proposals to penalize bad corporate debt somehow defined could result in a competitive advantage for foreign buyers of U.S. companies if the foreign acquiring company is able to finance the purchase with foreign debt. It may be possible to design tax rules that would limit this foreign competitive advantage but these rules are likely to be very complex and will raise tax treaty problems.[99]

Two important measurement considerations should be kept in mind. First, there are indications that institutional arrangements in Japan and Germany may affect the comparability of leverage measures. Japanese and West German banks, unlike their U.S. counterparts, often own shares in the companies to which they lend. Thus, it has been argued that when Japanese and West German firms undergo financial distress, their risk of bankruptcy is reduced because their shareholder/lenders are likely to come to their aid. In contrast, the absence of such shareholder/lenders in America, some believe that U.S. firms have greater bankruptcy risk for equal amounts of leverage.[100]

The second measurement consideration concerns a relationship between increased leverage and a lower the cost of capital. Studies comparing leverage positions for United States firms and firms of other industrialized nations conclude that U.S. firms generally have lower leverage ratios. As U.S. companies become more highly leveraged, their average cost of capital can be expected to decline; this should help American firms to become more competitive in international markets.[101]

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[98] Gertler and Hubbard, Taxation, Corporate Capital Structure, and Financial Distress, October 1989, p. 46.

[99] Clark, Richard A. and Emil M. Sunley. Corporate Debt: What Are the Issues and What Are the Choices. *National Tax Journal*, v. 42, no. 3, September 1989. p. 281-282.

[100] See McCauley and Zimmer, Explaining International Differences in the Cost of Capital, p. 7-28; and Gertler and Hubbard, Taxation, Corporate Capital Structure, and Financial Distress, October 1989, p. 46.

[101] See Warshawsky, *Is There a Corporate Debt Crisis? Another Look*, p. 18-19; and for a related theoretical argument, see Hodder, James E. and Lemma W. Senbet.
(continued)

SOME POLICY CONSIDERATIONS

The charts and tables presented elsewhere in this study document deteriorating corporate balance sheets. This phenomenon has been studied often; some observers find no cause for concern, while others emphasize the need for public policy changes. Causal relationships are often the most useful information for establishing policy guidelines, but in the case of corporate leverage, the appropriate policy prescription(s) is obscured by the presence of many rationales. A 1989 conference sponsored by the Federal Reserve Bank of Boston provides a useful summary regarding policy options.

> In general, the participants observed that no simple theory explains fully the recent trends in business finance. For example, tax laws alone do not determine a corporation's capital structure. A satisfactory explanation might also depend on agency costs, objectives of stakeholders, the importance of corporate control, financial regulations, the relative cost of funds, and the dynamic strategies of management. Consequently, an attempt to reduce leverage through a simple reform of tax law, financial regulations, or bankruptcy law may not succeed. Even if it were successful, the cost of reforming policy could exceed its benefits, especially if other objectives of these policies were compromised in order to regulate leverage.[102]

This part of the report reviews the tax treatment of corporate debt; for those who regard change as an indicated remedy, adjustment of the U.S. tax code is the most frequently suggested course of action.

TAXATION OF CORPORATE DEBT

In recent years, questions on the role that the internal revenue code has played in the growth of debt financing have received special prominence in public policy debates.

For financial economists viewing the relative advantages for a corporation in opting for debt or equity to fill its external financing requirements, the seminal work is a 1958 article by Franco Modigliani and Merton Miller.[103] This study is widely interpreted as having started an analytic process which — simply put — established that taxes account for the difference in cost between debt and equity

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(continued) International Capital Structure Equilibrium. *Journal of Finance*, v. 45, no. 5, December 1990. p. 1495-1516.

[102] Kopcke, Richard W. and Eric S. Rosengren. Are the Distinctions Between Debt and Equity Disappearing? An Overview. *New England Economic Review*, March/April 1990. p. 4.

[103] Modigliani, Franco and Merton H. Miller. The Cost of Capital, Corporation Finance, and The Theory of Investment. *American Economic Review*, v. 48, no. 3, June 1958. p. 261-297.

for a corporation; on the 30th anniversary of publication, Miller provided the following update and restatement.

> The U.S. Internal Revenue Code has long been the classic, and by now is virtually the world's only, completely unintegrated tax system imposing "double taxation" of corporate net income. A separate income tax is first levied directly in the corporation and, except for certain closely-held corporations who may elect to be taxed like partnerships under Subchapter S of the Code, a second tax is then levied at the personal level on any income flows such as dividends or interest generated at the corporate level. Double taxation of the interest payments is avoided because interest on indebtedness is considered a cost of doing business and hence may be deducted from corporate gross income in computing net taxable corporate earnings. But no such allowance has been made for any costs of equity capital. . . . Securities, after all, are just ways of partitioning the firm's earnings; the MM [Modigliani-Miller] propositions assert only that the sum of the values of all the claims is independent of the number and the shapes of the separate partitions.[104]

Corporate finance officers have developed guidelines consistent with the MM propositions. For example, there are rules of thumb for the short term which indicate that a company should avoid paying dividends, and should use its financial capital to buy back its stock. For the long term, the MM approach counsels that increased leverage reduces the corporate tax liability, and, in the extreme, that "the optimal capital structure might be all debt."[105] Thus, an interesting question arises — if the MM propositions are correct, why have all corporations not shifted to total reliance on debt? One explanation, attributed to Roger Gordon and Burton Malkiel, relies on corporate aversion to the increased exposure to bankruptcy risk which accompanies increased corporate leverage.[106]

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[104] Miller, Merton H. The Modigliani-Miller Propositions After Thirty Years. *Journal of Economic Perspectives*, v. 2, no. 4, Fall 1988. p. 111. Also see Modigliani, Franco. MM — Past, Present and Future. *Journal of Economic Perspectives*, v. 2, no. 4, Fall 1988. p. 149-158. This issue of the *Journal of Economic Perspectives* also contains three evaluations of the MM propositions.

[105] Miller, The Modigliani-Miller Propositions After Thirty Years, p. 112.

[106] The Gordon and Malkiel article, Corporation Finance, can be found in p. 131-198 of Aaron, Henry J. and Joseph A. Pechman. *How Taxes Affect Economic Behavior*. Washington, Brookings Institution, 1981. xvi, 456 p. (Studies of Government Finance. Second Series). For a discussion of how Gordon and Malkiel fit into the literature, see U. S. Library of Congress. Congressional Research Service. *The Corporate Income Tax and the U.S. Economy*, by David L. Brumbaugh and Jane G. Gravelle. CRS Report 84-143 E. Washington, 1984. p. 52-54. Also see MacKie-Mason, Jeffrey K. Do Taxes Affect Corporate Financing Decisions? *Journal of Finance*, v. 45, no. 5, December 1990. p. 1471-1493.

Opinion: Debt vs. Equity

No longer an arcane subject, the tax treatment of debt vs. equity has received considerable attention from Congress; 1989 hearings called forth a wide spectrum of opinion. For example:

Academic Economist — I

> The ultimate aim of tax policy should not be to discourage borrowing in general or leveraged buyouts in particular, but simply to ensure that such activities are not driven by tax advantage.
>
> Given the increasing difficulty of telling debt from equity, the only practical way to achieve "neutrality" is to reduce and eventually remove the distinction between debt and equity imposed by the income tax. A component of most plans would be tax relief for corporate dividends, but the relief must be restricted in some way to avoid enormous losses of tax revenue. . . .
>
> In a dynamic economy experiencing financial innovations and more competition for corporate control, it is natural to ask to what extent the changes we observe are for the best. It is not clear that the tax advantage to debt is an important cause of recent increases in borrowing, but this distortion has merited correction for many years and might well be addressed now to ensure that it play no part in future behavior. The solution chosen, however, ought to satisfy the ultimate objectives of taxation rather than simply assuage the fears of the moment.[107]

Academic Economist — II

> Recent increases in corporate indebtedness are probably not primarily tax motivated, and do not pose grave dangers to economic stability. In some cases, they are associated with improvements in economic efficiency. There is, however, little case for subsidizing debt to the extent done by current tax rules. Reforms that tightened the tax definition of debt would have relatively small effects on acquisition transactions if the proponents of these transactions are to be believed. They would raise some revenue, correct some abuses, and probably improve economic performance by eliminating some marginal buyouts and increasing the equity share in others.
>
> For the longer term, recent developments suggest the need to rethink basic questions about our approach to capital taxation, including the

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[107] Statement of Alan J. Auerbach, Chairman and Professor, Department of Economics, University of Pennsylvania. U.S. Congress. Senate. Committee on Finance. *Leveraged Buyouts and Corporate Debt*. Hearing, 101st Congress, 1st session. January 25, 1989. Part 2. Washington, G.P.O., 1989. S. Hrg. 101-54, Pt. 2. p. 52, 64.

choice of the income tax base, the decision to double tax corporate equity income, the use of income rather than wealth concepts in assessing tax burdens, and the taxation of capital gains on a realization basis.[108]

Individual Investor — I

Our ratio of equity and debt is completely out of balance by any standard economic yardstick. This can be remedied by a change in the tax treatment of corporate debt and equity.... The double taxation on dividends should be eliminated. This is unfair. In all our surveys through the years this was the number one concern of stockholders.[109]

Individual Investor — II

If Congress wants to reduce the level of debt used in mergers and acquisitions, or corporate financing in general, it should remove the tax bias against equity financing. The current system penalizes equity relative to debt through the so-called double taxation of dividends.

Given the deductibility of interest expenses, the tax treatment of equity creates a strong lure toward debt. But I urge the committee not to impose new taxes on debt. This would put Americans at a distinct disadvantage to foreign investors, who would not be subject to the new taxes, as well as penalize corporate transactions which are leading to new levels of productivity and efficiency.[110]

National Association of Manufacturers (NAM)

NAM is opposed to limitations on the deductibility of interest. This opposition is based on our belief that the federal corporate income tax is intended to — and should — be a tax on net income, not a tax on gross receipts.... Under present law, interest is treated properly and dividends improperly. The answer is most assuredly not to "level the playing field" by treating both improperly.[111]

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[108] Statement of Lawrence H. Summers, Nathaniel Ropes Professor of Political Economy, Department of Economics, Harvard University. Ibid. p. 203-204.

[109] Statement of Margaret Cox Sullivan, President, Stockholders of America, Inc. U.S. Congress. House. Committee on Ways and Means. *Tax Policy Aspects of Mergers and Acquisitions*. Hearings, 101st Congress, 1st session. May 16 and 17, 1989. Part II. Washington, G.P.O., 1989. Serial no. 101-42. p. 159.

[110] Statement of T. Boone Pickens, Chairman, United Shareholders Association. Ibid. p. 153.

[111] Statement of Paul R. Huard, Vice President, Taxation and Fiscal Policy. National Association of Manufacturers. Ibid. p. 230-231.

Organized Labor

> As a tax policy matter we see no real reason to tax a dollar of debt financed income any lower than a dollar financed by an equity investment. And, the distinction between debt and equity has always been a muddy and elusive one. Neither the Congress nor the Treasury have been able to define a clear boundary line. However, as a practical matter, we do not feel that now is the time for fundamental overhaul of the tax structure.[112]

Securities Industry Association (SIA)

> For its part, SIA believes strongly that Congress should not attempt to direct the use of borrowed capital by fine tuning the corporate interest expense deduction in any manner or form. The allocation of capital is best left to the marketplace. . . . Debt and equity are both legitimate methods of raising capital. The problem with the two-tier tax is not that interest is deductible, but that distributed corporate earnings are currently taxed both to the corporation and to shareholders.[113]

U.S. Chamber of Commerce

> Any policy proposal should be judged by its likely impact on the cost of capital, competitiveness and economic growth. The policy initiatives that are most appropriate are the provision of substantial dividend relief and the reinstatement of the capital gains differential. Interest expense should remain deductible as a business expense, and adverse changes in the taxation of foreign income should be avoided.[114]

U.S. Treasury

> It is clear that the structure of our corporation income tax in which the income from equity capital is often taxed twice or more — once when income is earned by the corporation and again at the individual tax level when distributions are made in the form of dividends and possibly again when intercorporate distributions are made — encourages debt over

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[112] Statement of Arnold Cantor, Assistant Director, Economic Research Department, American Federation of Labor and Congress of Industrial Organizations. Ibid. p. 69-70.

[113] Statement of Hardwick Simmons, Chairman, Securities Industry Association. Ibid. p. 169, 171.

[114] Statement of James K. Baker, Vice Chairman, U.S. Chamber of Commerce. Ibid. p. 226.

> equity financing. This non-neutrality of the corporate income tax with respect to financing decisions is a potential source of inefficiency which, given the structure of our trading partners' tax systems, may be having a detrimental effect on American business as a global competitor. . . .
>
> The conclusions we express today reflect our view that the economic evidence currently available does not justify major steps such as limiting interest deductions. We are particularly concerned that such actions, once taken, may themselves become an impediment to future corporate tax reform to reduce the bias against corporate equity investment.[115]

DEFINITION OF CORPORATE DEBT

In a corporation's capital structure, the conceptual difference between debt and equity is mostly clear-cut. Holders of debt are creditors of the corporation; in case of bankruptcy, the debt holders have the most senior claim on corporate assets. Equity holders are owners of the corporation with the right to exercise control over the corporate assets.

Debt may be short-term (e.g., bank credit) or long-term (e.g., bonds), but generally refers to an obligation to make periodic payments (interest) for the use of borrowed funds and, ultimately, to repay the borrowed funds. Debt is a corporate liability, and debt holders are creditors of the corporation. Equity represents an ownership interest in the company; the claim of equity owners — shareholders, stockholders — to corporate resources is a residual interest equal to the worth of the corporation minus corporate liabilities.

While the conceptual difference between debt and equity is clear-cut, translating that distinction into workable tax rules is difficult. In 1969, as one response to an increase in corporate mergers and the use of debt to finance corporate acquisitions, Congress enacted Internal Revenue Code section 385.

> Section 385 granted to the Secretary of the Treasury the authority to prescribe such regulations as may be necessary or appropriate to determine whether an interest in a corporation is to be treated as stock or as indebtedness for Federal income tax purposes. The regulations were to prescribe factors to be taken into account in determining, with respect to particular factual situations, whether a debtor-creditor relationship or a corporation-shareholder relationship existed.[116]

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[115] Statement of John G. Wilkins, Acting Assistant Secretary (Tax Policy), Department of the Treasury. Ibid. p. 33, 56.

[116] U.S. Congress. Joint Committee on Taxation. *Federal Income Tax Aspects of Corporate Financial Structures*. Washington, G.P.O., 1989. (Joint Committee Print JCS-1-89, January 18, 1989) p. 36. A note suggests that "For a discussion of the background of section 385, see S. Rep. No. 552, 91st Cong., 1st Sess. 137-44 (1969)."

Starting in March 1980, the Treasury issued section 385 regulations but they never became final; all such regulations were withdrawn in July 1983, and no additional regulations have been issued. The determination of whether a security is classed as debt or equity continues to be set in case law.[117]

Financial market developments and the tax treatment of corporate income have blurred the distinction between debt and equity to the point of ambiguity. Securities sharing characteristics of both debt and equity have a long history, but their classification is not usually an open question; e.g., debt which is convertible to equity is still debt, and preferred shares may have rights senior to common shares but are still equity. The issuers of securities have been very creative in designing novel instruments, sometimes coming so close to the border between debt and equity that it is difficult for regulators to identify the proper label for such securities. As an example, note a 1989 SEC ruling that preferred stock with certain special features may not be classified as equity.[118]

A study by the Joint Committee on Taxation points out that

> The characterization of an investment in a corporation as debt or equity for Federal income tax purposes is generally determined by the economic substance of the investor's interest in the corporation. The form of the instrument representing the investment and the taxpayer's characterization of the interest as debt or equity is not necessarily controlling. However, taxpayers have considerable latitude in structuring the terms of an instrument so that an interest in a corporation will be considered to be debt or equity, as so desired.
>
> There is presently no definition in the Code or the regulations which can be used to determine whether an interest in a corporation constitutes debt or equity for tax purposes. Such a determination must be made under principles developed in case law. Courts have approached the issue of distinguishing debt and equity by trying to determine whether the particular investment at issue in each case more closely resembles a pure debt interest or a pure equity interest. It is generally understood that a pure debt instrument is ordinarily represented by a written, unconditional promise to pay a principal sum certain, on demand or before a fixed maturity date not unreasonably far in the future, with interest payable in all events and not later than maturity.* Conversely, with a pure equity interest is generally understood as an investment which places the funds contributed by the investor at the risk of the enterprise, provides for a share of any future profits, and carries with it rights to control or manage the enterprise.

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[117] For a study which includes a number of case law citations, see Gibson, Margaret A. The Intractable Debt/Equity Problem: A New Structure for Analyzing Shareholder Advances. *Northwestern University Law Review*, v. 81, Spring 1987. p. 452-491.

[118] Schultz, Abby. SEC Says Preferreds With Event-Risk Puts Aren't Equity. *Investment Dealers' Digest*, November 27, 1989. p. 42-43.

> The determination of whether an interest constitutes debt or equity is generally made by analyzing and weighing the relevant facts and circumstances of each case.** Some interests in a corporation can clearly be characterized, on their face, as either debt or equity. However, other interests may have features common to both debt and equity (known as "hybrid securities"), or underlying facts and circumstances may indicate that an interest has been inappropriately characterized as debt or equity (such as when purported debt is held by the corporation's shareholders on a pro rata basis, or when debt is held in a thinly capitalized corporation).[119]

In a less formal manner, recent evaluations have focused more on the forest than the trees in viewing the debt/equity definitional problem. The results are not sanguine. For example:

> The inability of the government to find a practical way of implementing section 385, combined with new developments in "financial engineering" in the 1980s, has allowed firms to issue equity-like securities that make a mockery of the statute's list of factors. A cynical view would be that the single most salient feature in determining whether a security is classified as debt or equity is the name given to the issue.[120]

In October 1989, the Federal Reserve Bank of Boston held a conference devoted to current evaluations of the distinctions between debt and equity. An overview began by noting the development of innovative financial securities in the 1980s and suggested some implications of these ramifications.

> These innovations have challenged the traditional financial and legal distinctions between debt and equity. Accordingly, public policy may need to adapt along with financial relationships, because income tax laws, regulations governing financial institutions, corporation law, and definitions of the legal rights and responsibilities of an enterprise's owners or creditors depend on clear boundaries to separate classes of creditors and equityholders. For example, if varieties of debt and equity

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[119] Joint Committee on Taxation, *Federal Income Tax Aspects of Corporate Financial Structures* (Joint Committee Print JCS-1-89), p. 35. There follows a list of fifteen features characteristic of debt, as determined by various courts. Notes in the original text:

* See, e.g., *Farley Realty Corp. v. Comm'r*, 279 F.2d 701 (2d Cir. 1960), and B. Bittker & J. Eustice, *Federal Income Taxation of Corporations and Shareholders*, ps. 4.03 (1979).

** In *John Kelley Co. v. Comm'r*, 326 U.S. 489 (1943), the Supreme Court stated that "[t]here is no one characteristic, not even the exclusion from management, which can be said to be decisive in the determination of whether the obligations are risk investments in the corporations or debts."

[120] Bulow, Summers, and Summers, Distinguishing Debt From Equity in the Junk Bond Era, p. 5-6.

> instruments are more commonly regarded merely as alternative methods of financing businesses, both the bankruptcy law's distinctions among stakeholders and the income tax law's traditional distinction between interest payments (an expense) and profits (taxable income) may need to be amended. Similarly, many of these laws, regulations, and conventions that encourage financial intermediaries to hold debt rather than equity may require revision. Whether these distinctions account for the recent increase in leverage or not, if policymakers regard leverage as excessive, reforms of the appropriate laws and regulations could foster equity financing.[121]

Several participants at the Boston Fed conference presented studies dealing with tax aspects of corporate debt/equity considerations; no study found a relationship between tax changes and the corporate debt buildup of the 1980s. Alan Auerbach considered "the theory and evidence relating tax factors to the recent borrowing surge, concluding that changes in tax incentives are not the primary cause of the shift toward debt and that the social costs of increased borrowing may have been overstated."[122] In a study of the regulation of debt and equity, Kopcke and Rosengren conclude that "the regulations governing financial intermediaries promote debt financing by businesses." They suggest that: "Instead of emphasizing restrictions on assets, often favoring debt over equity, regulators should rely on capital controls by enforcing substantial minimum capital requirements, to be financed by common stock."[123]

Even though definitions supporting section 385 remain remote, congressional interest in the 101st Congress had been directed at a reconsideration of the tax treatment of corporate debt. One summary of these proposals is in the following section.

PROPOSED TAX CHANGES

Before reviewing suggested changes in the application of taxes to corporate debt, it may be useful to outline the relationships involved. Corporate bondholders receive periodic interest payments and are liable for any income tax on this distribution; for corporate tax purposes, interest is a corporate expense deducted before calculating any tax liability. Stockholders in a company receive periodic dividend payments and are liable for any income tax on this distribution; however, these funds are paid out of after-tax corporate earnings, and thus are taxed twice by the Federal Government. The double taxation of corporate dividend payments is a two-tier income tax system; various degrees of integration of the corporate

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[121] Kopcke and Rosengren, *Are the Distinctions Between Debt and Equity Disappearing?*, p. 1-2.

[122] Auerbach, Alan. Tax Policy and Corporate Borrowing. Ibid., p. 137.

[123] Kopcke, Richard W. and Eric S. Rosengren. Regulation of Debt and Equity. Ibid., p. 174.

tax and the individual tax have been suggested as alternatives to the two-tier system.

Increased congressional interest in changing the tax treatment of corporate debt is manifest in hearings and proposed legislation. This part of the CRS report relies on a 1989 study by the Joint Committee on Taxation (JCT) and, for the most part, repeats, restates, or paraphrases the material in that study.[124] The JCT identified four possible approaches to altering the favorable tax treatment of debt: A) Eliminating or reducing the distinction between debt and equity by integrating the corporate and individual income tax systems; B) Eliminating or reducing the distinction between debt and equity by limiting interest deductions; C) Combination of interest disallowance and dividend relief options; D) Other options.

Cataloging ways to eliminate investment distortions ascribed to the two-tier tax system is the focus of the JCT study; their concern includes the effect of different proposals on both corporate and individual taxpayers.

Eliminate or Reduce the Distinction Between Debt and Equity by Integrating the Corporate and Individual Income Tax Systems

The JCT study notes that advocates of integration claim the two-tier tax creates distortions in economic decision-making; the two-tier tax interferes with three tax system goals: (1) neutrality between corporate and noncorporate investment — the two-tier tax may discourage some from deciding to carry on business in corporate form in situations where nontax considerations indicate that corporate operations would be preferable; (2) neutrality between debt and equity financing at the corporate level — to the extent that there is a bias in favor of debt financing, the risk of bankruptcy is increased for corporations, especially those in cyclical industries; and (3) neutrality between retention and distribution of corporate earnings — where shareholders are better able than the corporation to put capital to its most productive use, a tax-based disincentive to distribute earnings creates economic inefficiency.[125]

The case for integration relies, in part, on the assumption that some of the corporate restructurings in the 1980s were influenced more by the two-tier system than a quest for efficient resource allocation. Opponents of integration cite the uncertainty surrounding the relationship between the two-tier tax system and

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[124] Joint Committee on Taxation, *Federal Income Tax Aspects of Corporate Financial Structures* (Joint Committee Print JCS-1-89).

[125] Ibid., excerpted from p. 84-85; there are exceptions to each criticism.

corporate financial decisions, and also point out that achieving revenue neutrality would require substantial tax increases.[126]

Forms of Integration

Corporate and individual tax systems could be completely integrated, or partly integrated. One way to achieve complete integration would be to eliminate the corporate tax, and include undistributed as well as distributed corporate earnings in shareholders' gross income. A number of different versions are noted in the JCT report; e.g., tax could be withheld at the corporate level or collected at the shareholder level; all corporations could be treated like partnerships, passing through credits and losses as well as the character (ordinary or capital gain) and source (domestic or foreign) of income; all corporations could be treated like real estate investment trusts, passing through net income but not losses in excess of income.

Dividend relief at the corporate level could be attained by allowing a deduction for dividends paid to shareholders. A portion of the double tax on dividends could be eliminated by means of a partial dividends-paid deduction; this would reduce the corporate tax on distributed as compared to retained corporate income.

One method for relieving the tax burden on dividends at the shareholder level would be to exclude a portion of dividends from gross income. This alternative has been criticized as reducing the progessivity of the income tax, since the tax benefit of exemption is greatest for shareholders in the highest tax bracket. Shareholders might be required to reduce stock basis, to the extent of tax exempt dividends, to prevent deduction of capital losses associated with untaxed dividends.

An alternative to shareholder exemption is to give shareholders an income tax credit to reflect all or a portion of the corporate level tax paid with respect to dividends. The amount of the credit could be adjusted based on the degree to which partial relief from the two-tier tax is desired. Under such a system, shareholders who receive dividends would be required to "gross up" the dividend by the amount of the credit for corporate taxes paid, and include the grossed-up amount in income, while using the credit as an offset to their tax liability.

Foreign Experience With Dividend Relief

Based on foreign tax law as of 1983, the JCT report points out that most of our trading partners have eliminated part or all of the double tax on dividends. West Germany has eliminated all double taxation; Canada has eliminated more than half of double taxation; France and the United Kingdom have eliminated

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[126] The U.S. Treasury has had a report on the integration of corporate and personal income taxes, i.e. the elimination of the double taxation of corporate dividends, in preparation for an extended period. Current indications are that the report will be available in 1991. *Wall Street Journal*, September 12, 1990. p. A1.

half of double taxation; and Japan has eliminated a smaller fraction of double taxation.

Citing a 1977 publication by CRS Senior Specialist Harry G. Gourevitch,[127] the JCT report noted that in view of this evidence and the extremely high debt-to-equity ratios reported in Japan (which has a split-rate system) and West Germany (which fully relieves the double tax on dividends), adoption of dividend relief in the United States may not achieve the objectives espoused by some proponents, i.e., to reduce corporate debt-to-equity ratios and debt-financed acquisitions.

Issues Regarding Integration Options

The JCT report recognizes a number of issues regarding integration, i.e., method of granting relief, treatment of tax preference items, international aspects, treatment of foreign tax credit, treatment of tax-exempt shareholders, transition issues, and new equity integration.

These complex issues have not been resolved, and will not be considered in this CRS report. Nonetheless, an indication of the difficult choices facing policy makers is apparent in the following JCT comments.[128]

> Full integration generally is considered to be the most theoretically desirable method of providing relief from the two-tier tax, since all income earned at the corporate level would be taxed directly and currently to the shareholders, leaving none of the possible distortions described above. However, such a system is also considered to be difficult to implement. Considerable administrative difficulties are inherent in a system of full integration.
>
> The dividends paid deduction and the shareholder credit generally are considered the most feasible methods of implementing some relief from the two-tier tax and in many respects are considered economic equivalents. They operate to provide relief only with respect to distributed income.

Eliminate or Reduce the Distinction Between Debt and Equity by Limiting Interest Deductions

The JCT study presents three proposal classifications and one catch-all grouping for suggested changes with regard to interest disallowance. These are (1) broad interest disallowance proposals not dependent on particular types of corporate

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[127] Gourevitch, Harry G. Corporate Tax Integration: the European Experience. *Tax Lawyer*, v. 31, no. 1, Fall 1977. p. 82-83.

[128] Joint Committee on Taxation, *Federal Income Tax Aspects of Corporate Financial Structures* (Joint Committee Print JCS-1-89), p. 95, 97.

transactions; (2) disallowance corporate interest deductions in transactions that reduce the corporate equity base; (3) disallowance of corporate interest deductions in more specified acquisition or stock purchase situations; and (4) certain considerations common to all interest disallowance approaches or to specified categories of approaches.

Appropriate caveats are noted by the JCT in introductory comments for this material.

Interest disallowance proposals should be evaluated with reference to various policy issues. These issues include: the potential erosion of the business tax base (including but not necessarily limited to the corporate tax base); the proper measurement of economic income; the non-tax economic impact of business leverage; and whether certain specified types of transactions should be discouraged for various other non-tax economic reasons. In addition, administrability and fairness issues may be raised.

Particular interest disallowance proposals may address one or more of these issues. The proposals may be more or less comprehensive in treatment of the issues they do address. Because the proposals differ widely in the nature of the issues they address, it is necessary to determine which policy issues are considered significant in order to evaluate the desirability of any particular proposal.

Broad Interest Disallowance Proposals Not Dependent on Particular Types of Corporate Transactions

In describing this category, the JCT report notes that all interest deductions above a specified amount could be disallowed. There are several variations to this approach, each of which computes the amount of the disallowance based on different factors. The factors selected indicate the policy objectives of the proposals. The following proposals are included under this heading: disallow a flat percentage of all interest deductions; disallow interest deductions in excess of a specified rate of return to investors; disallow interest deductions based on inflation, i.e., use interest indexing; and disallow interest deductions in excess of a specified percentage of taxable income (or earnings and profits) as computed before the deductions.

Disallow Corporate Interest Deductions in Transactions That Reduce the Corporate Equity Base

This approach is directed to preservation of the corporate revenue base. The approach also can be described as one directed to the proper measurement of economic income at the corporate level. The theory is that a corporate-level interest deduction should not be permitted for a borrowing used to support a distribution that will not produce any corporate-level income, but on the contrary will reduce the corporate tax base.

Disallow Corporate Interest Deductions in More Specified Acquisition or Stock Purchase Situations

Many of the particular options under this heading have been associated with proposed congressional legislation. The JCT report identifies three types of proposals in this category.

The first type of proposal would limit corporate interest deductions in the case of acquisitions where additional factors suggesting risk are also present. Recommendations in this category are based on a number of premises, including 1) that it is appropriate to distinguish corporate-level debt from equity in to identify deductions properly deductible against economic income of entity (viewed as the income ultimately available for distribution to identified as equity holders of the corporation); and 2) the premise that degree of risk involved is the ultimate distinguishing factor between debt and equity. Proposals in this group recognize the Treasury Department's lack of success in its various attempts to issue regulations distinguishing corporate debt from corporate equity and would deny the interest deduction if certain equity-like characteristics are present.

The second category of proposals would limit interest deductions in certain transactions where debt supports a distribution of corporate equity, unless corporate-level tax is paid on corporate asset appreciation. The JCT study notes that a fundamental aspect of this type of proposal is a belief that the borrowings and distributions targeted by the proposal frequently occur when a corporation has appreciated assets that produce a steady income stream, and that the borrowing and distribution enables the corporation to shelter its income from the appreciated assets (in effect, to shelter its recognition of the appreciation) while distributing a part or all of the value of the appreciation to shareholders.

The third type of proposal would limit interest deductions and/or require gain recognition in the case of certain hostile acquisitions. The JCT report notes several difficulties with this type of proposal including addressing the tax consequences or risks of leverage only in cases of hostile takeovers; the report also points to the difficulty in distinguishing hostile takeovers, and the possibility that such proposals may entrench management when a change of management might be desirable.

Certain Considerations Common to All Interest Disallowance Approaches or to Specified Categories of Approaches

Interest disallowance concerns under this heading are divided by the JCT into four categories: distinguishing between the corporate sector and other sectors; situations where borrowing may occur outside U.S. taxing jurisdiction; interest allocation issues and other deductions; and transition issues. Under transition issues, the JCT report notes that any attempt to impose interest disallowances will have major implications to existing debt issuers and holders. It would first be necessary to determine whether outstanding debt will be grandfathered. If

there is no grandfathering rule for existing debt, large windfall wealth gains and losses will be generated in the economy.

Combination of Interest Disallowance and Dividend Relief Options

The JCT report considers two general headings in this classification: provide a deductible rate of return for corporate-level equity and limit interest deductions to the same rate; and allow an investor credit for interest and dividends and deny corporate interest deduction.

Provide Deductible Rate of Return for Corporate-Level Equity and Limit Interest Deductions to The Same Rate

The major advantage of this proposal is that the treatment of debt and equity would be more closely aligned since the cost of all externally raised capital generally would be deductible to the same extent. This could remove some of the importance of distinguishing debt from equity.

In addition, the proposal might alleviate pressure for the issuance of debt, and to this extent would address non-tax issues related to concern about the economic consequences of leverage. This proposal, standing alone, is not designed to address any issues related to the potential erosion of the tax base. Although the deduction with respect to debt would be limited, the new deduction for equity might offset that limit in many cases. Depending upon the rate selected and the transitional rules adopted, the total amount of available deductions might be reduced for some corporations, but might increase for others.

Moreover, the proposal does not address issues related to the reduction of the corporate tax base by debt-financed distributions or by other distributions. However, it could be combined with other proposals directed to such issues.

A discussion of implementation problems follows: choosing the deductible rate, the effective date of the proposal, new vs. existing capital deductions.

Allow an Investor Credit for Interest and Dividends and Deny Corporate Interest Deduction

One advantage of this option is that the tax treatment of debt and equity would be equalized. One issue raised by this option is the effect it would have on other business entities (e.g., partnerships), depending on whether the option applied only to corporations or to a broader class of business entities.

Other Options

The options included under this heading by the JCT report include: imposing minimum tax on distributions; requiring recognition of corporate-level gain to the extent corporate-level debt is incurred in excess of corporate-level underlying asset basis; imposing excise tax on acquisition indebtedness; developing objective standards for distinguishing between debt and equity; proposals relating to employee stock ownership plans; and impose unrelated business income tax in certain transactions.

LONG-TERM PERSPECTIVE

Are the postwar years the most appropriate period to study? Robert Taggart scans the entire twentieth century and notes that corporate leverage now is less than it was in the period 1930-45, and that it is lower in this country than in Europe or Japan. He notes that corporations are indeed more leveraged now. Taggart sees as the cause of increased leverage the disappearance of equity, which is part of the corporate restructuring movement. This long-term perspective ends on a note of caution to policymakers.

> Undoubtedly, some of the companies that have adopted highly leveraged capital structures in recent years will prove ultimately to have overreached. But for the most part, these firms appear to be taking calculated risks rather than reckless gambles. They are taking on additional financial risk in exchange for the perceived benefits of restructuring. Before we take steps to limit their risk, therefore, these offsetting benefits should be better understood.[129]

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[129] Taggart, Robert A., Jr. Corporate Leverage and the Restructuring Movement of the 1980s. *Business Economics*, v. 25, April 1990. p. 18.

APPENDIX A: GLOSSARY

The definitions presented were selected from authoritative sources, and for the most part, the definitions are reproduced verbatim as originally published. In a few cases, minor editorial changes have been introduced. Following each entry is a numeric code which identifies one of the six works cited on the last page of this glossary as the source for the definition. When no source is given for the entry, the definition is provided by CRS. Cross-referenced text entries are identified in ***boldface italic***.

Acid-test ratio. [2] The sum of cash, temporary investments in marketable securities, and current receivables, divided by current liabilities (also called the quick ratio). The acid-test ratio is a conservative measure of the ability to meet current obligations.

Accumulated depreciation. [2] The total ***depreciation*** recognized and recorded for an asset since its acquisition. Accumulated depreciation is a ***contra asset*** and is subtracted from the original cost of the asset to give ***book value***. Accumulated depreciation has a normal credit balance. A journal entry to recognize depreciation is made each accounting period.

Asset. [2] An object, right, or claim that is expected to provide benefits to its owners. An asset appears on the ***balance sheet*** and has a normal debit balance.

[1] Anything having commercial or exchange value that is owned by a business, institution, or individual.

Balance sheet. [2] A report of a company's ***assets***, ***liabilities***, and ***equities***; also called a statement of financial position. The balance sheet gets its name from the fact that the sum of the assets equals the sum of the liabilities plus equities; the totals "balance."

[1] A financial report, also called a statement of condition or statement of financial position, showing the status of a company's assets, liabilities, and owners' equity on a given date, usually the close of a month. One way of looking at a business enterprise is as a mass of capital (***assets***) arrayed against the sources of that capital (***liabilities*** and ***equity***). Assets are equal to liabilities and equity, and the balance sheet is a listing of the items making up the two sides of the equation. Unlike a ***profit and loss statement***, which shows the results of operations over a period of time, a balance sheet shows the state of affairs at one point of time. It is a snapshot, not a motion picture, and must be analyzed with reference to comparative prior balance sheets and other operating statements.

Bankruptcy. [1] State of insolvency of an individual or an organization—in other words, an inability to pay debts. There are two kinds of legal bankruptcy under U.S. law: involuntary, when one or more creditors petition to have a debtor judged insolvent by a court; and voluntary, when the debtor brings the petition. In both cases, the objective is an orderly and equitable settlement of obligations.

The 1978 Bankruptcy Reform Act removed some of the rigidities of the old law and permitted more flexibility in procedures. The Bankruptcy Reform Act of 1984 curtailed some of the more liberal provisions (mainly affecting consumer bankruptcy) of the 1978 act.

Chapter 7 of the 1978 act, dealing with ***liquidation***, provides for a court-appointed interim trustee with broad powers and discretion to make management changes, arrange unsecured financing, and generally operate the debtor business in such a way as to prevent loss. Only by filing an appropriate bond is the debtor able to regain possession from the trustee.

Chapter 11, which deals with ***reorganization***, provides that, unless the court rules otherwise, the debtor remains in possession of the business and in control of its operation. Debtor and creditors are allowed considerable flexibility in working together. The 1978 law relaxes the old absolute priority rule, which gave creditor claims categorical precedence over ownership claims. It also makes possible the negotiation of payment schedules, the restructuring of debt, and even the granting of loans by the creditors to the debtor.

Bond rating. [1] A method of evaluating the possibility of ***default*** by a bond issuer. Standard & Poor's, Moody's Investors Service, and Fitch's Investors Service analyze the financial strength of each bond's issuer, whether a corporation or a government body. Their ratings range from AAA (highly unlikely to default) to D (in default). Bonds rated B or below are not ***investment grade*** — in other words, institutions that invest other people's money may not under most State laws buy them. See ***investment grade***, ***junk bond***.

Book value. [2] The amount at which an item is carried in accounting records and reported in financial statements. Book value of a fixed asset is original cost less ***accumulated depreciation***. Book value per share of ***common stock*** is equal to total assets, minus total liabilities and any amount assignable to ***preferred stock***, divided by the number of common shares outstanding.

Capital stock. [2] Shares of ownership in a corporation, often used to refer to ***common stock*** when only one class of stock is outstanding.

Capital structure. [5] Broadly interpreted, capital structure encompasses a corporation's (including its subsidiaries') publicly issued securities, private placements, bank debt, trade debt, leasing contracts, tax liabilities, pension liabilities, deferred compensation to management and employees, performance guarantees, product warranties, and other contingent liabilities. This list represents the major claims to a corporation's assets. Increases or reductions in any of these claims represents a form of capital structure change.

Capitalization. [2] (1) The sum of long-term debt and ***owners' equity***, representing the total long-term equity in a company. (2) The process of recording expenditures as long-term assets instead of as expenses.

Capitalization ratio. [7] Measurement of longer-term sources of funds used by a corporation in terms of funded debt (bonds), preferred stock, and common stock. Normally stated as a percentage. For example, a company has longer term debt of $10, preferred stock of $5, and common stock of $35 (including surplus). Total capital is $50. Bond ratio is 20 percent, preferred stock is 10 percent, common stock ratio is 70 percent.

Cash flow. [2] The amount of cash generated by operations or by a specific project. This term sometimes refers to gross or total cash to be received, sometimes to net cash after payment of expenses; the specific meaning must be determined from the context.

Common stock. [2] Shares of ownership in a corporation having voting rights (for election of members of the board of directors, for example) but no special preference as to dividends. When only one class of stock is issued, it is common stock but is often called ***capital stock***. ***Preferred stock*** has preference with respect to dividends (dividends must be paid on preferred stock before any can be paid on common stock) but no voting rights. Sometimes more than one class of common stock is issued, with the different classes having different contractual rights. Common stock is an ***owners' equity*** account with a normal credit balance.

Contra account. [2] An account that is an offset to (a deduction from) another account. The contra account is used instead of reducing the primary account directly, in order to retain the original balance information shown in the primary account. ***Accumulated depreciation*** is an example of a contra account.

Contra asset. [2] A ***contra account*** deducted from an asset account to give ***netbook value***. ***Accumulated depreciation*** (deducted from a fixed asset account) is an example. A contra asset has a normal credit balance.

Current asset. [2] An ***asset*** expected to be sold, used, or converted into cash within one year or one operating period, whichever is longer. A term of one year is often assumed without regard to the length of the operating period. Current assets typically include cash, marketable securities, notes, and accounts receivable, inventories, and prepaid expenses.

Current liability. [2] An obligation expected to be paid or met by the use of ***current assets***, often used to refer to obligations to be settled within one year. Current liabilities typically include short-term notes payable, accounts payable, income taxes payable, payroll taxes payable, accrued expenses, and the portion of long-term debt payable within the current year.

Current ratio. [2] Total ***current assets*** divided by total ***current liabilities***; a rough indication of a company's ability to meet its short-term obligations.

Current value. [2] A value based on recent transactions or estimates. Three forms of current value are recognized: ***replacement cost***, resale or ***market value***, and the ***present value*** of future cash flows or benefits. Contrast with ***historical cost***.

Debt. [2] An obligation to pay cash or other goods or to provide services to another; a liability.

[1] (1) Money, goods, or services that one party is obligated to pay to another in accordance with an expressed or implied agreement. Debt may or may not be secured. (2) General name for bonds, notes, mortgages, and other forms of paper evidencing amounts owed and payable on specified dates or on demand.

Debt-asset ratio. See ***capitalization ratio***.

Debt-equity ratio. [2] The ratio of either total liabilities or total long-term debt to total stockholders' equity (the exact meaning must be determined in the context). The debt-equity ratio is a measure of the extent to which assets are financed by lenders and by equity investors (stockholders).

[1] (1) Total liabilities divided by total shareholders' equity. This shows to what extent ***owners' equity*** can cushion creditors' claims in the event of liquidation. (2) Total long-term debt divided by total shareholders' equity. This is a measure of leverage—the use of borrowed money to enhance the return on owners' equity. (3) Long-term debt and preferred stock divided by common stock equity. This relates securities with fixed charges to those without fixed charges.

Default. [1] Failure of a debtor to make timely payments of interest and principal as they come due or to meet some other provision of a bond indenture. In the event of default, bondholders may make claims against the assets of the issuer in order to recoup their principal.

Depreciation. [2] The reduction in value of tangible, long-lived assets, from use or obsolescence. This decline in value is recognized in accounting by a periodic allocation of the original cost of the asset to current operations. While loss in value is the basis for recording depreciation, accountants maintain that the depreciation charge is not intended to recognize the actual periodic value loss but is merely a systematic allocation of original cost over the asset's useful life.

Duration. [3] Reinvestment rate risk (i.e., changes in market yields) is a major concern to those investors who have purchased fixed-income securities. Increases (or decreases) in the reinvestment rate will increase (or decrease) reinvestment income from the coupons received. At the same time, they will decrease (or increase) the applicable market price of the security if it must be sold. A concept that is now being used to "immunize" against reinvestment risk is duration. Duration may be considered to be the weighted average maturity for a fixed income security. As such, it takes into consideration that some of the cash flows associated with a bond (the coupons) will be received before

maturity. There are many different ways to calculate this average maturity, including some that consider the stochastic process driving changes in the yield curve. The duration of a portfolio is considered to be equal to the weighted average duration of the securities comprising the portfolio. Duration is said to immunize against reinvestment risk if the duration of the portfolio (security) is equal to the time remaining in the investment horizon.

Equity. [1] Ownership interest possessed by shareholders in a corporation — stock as opposed to bonds. [2] An interest in or claim against resources. Both creditors and owners of a company have an equity in the company's assets. See also ***owners' equity***.

Face value. [1] The value of a bond, note, mortgage or other security as given on the certificate or instrument. Corporate bonds are usually issued with $1,000 face values, municipal bonds with $5,000 face values, and Federal Government bonds with $10,000 face values. Although the bonds fluctuate in price from the time they are issued until redemption, they are redeemed at maturity at their face value, unless the issuer defaults. If the bonds are retired before maturity, bondholders normally receive a slight premium over face value. The face value is the amount on which interest payments are calculated. Thus, a 10 percent bond with a face value of $1,000 pays bondholders $100 per year. Face value is also referred to as ***par*** value or nominal value.

Fair market value. [2] The price for which property would be expected to sell under normal conditions (willing seller, willing buyer, no compulsion or emergencies, no unusual shortages or excessive demand). See ***market value***.

Fiduciary. [1] A person, company, or association holding assets in trust for a beneficiary. The fiduciary is charged with the responsibility of investing the money wisely for the beneficiary's benefit. Some examples of fiduciaries are executors of wills and estates, receivers in bankruptcy, trustees, and those who administer the assets of underage or incompetent beneficiaries. Most U.S. States have laws about what a fiduciary may or may not do with a beneficiary's assets. For instance, it is illegal for fiduciaries to invest or misappropriate the money for their personal gain.

Fixed-charge coverage. [1] The ratio of profits before payment of interest and income taxes to interest on bonds and other contractual long-term debt. It indicates how many times interest charges have been earned by the corporation on a pretax basis. Since failure to meet interest payments would be a default under the terms of indenture agreements, the coverage ratio measures a margin of safety. The amount of safety desirable depends on the stability of a company's earnings. (Too much safety can be an indication of an undesirable lack of leverage.) In cyclical companies, the fixed-charge coverage in periods of recession is a telling ratio. Analysts also find it useful to calculate the number of times that a company's ***cash flow*** — i.e., *after*-tax earnings plus noncash expenses (for example, depreciation) — covers fixed charges.

"Going public." [2] Issuing securities to the public. For example, a privately held company (all shares of stock owned by a few people, with the shares not publicly traded) may find it needs substantial additional capital for expansion and growth. To obtain this capital, the owners may decide to "go public" by offering stock for sale to the public. Such public offerings are regulated, and may require approval from a state securities agency and/or from the SEC (***Securities and Exchange Commission***).

Historical cost accounting. [2] Financial accounting based on original or historical costs, unadjusted for inflation or for changes in value.

Immunization. See ***duration***.

Interest coverage ratio. See ***fixed-charge coverage***.

Interest rate. [3] Interest is the amount of money that the lender demands and the borrower agrees to pay at some later date as compensation for money exchanged today between these parties. Expressed in terms of the amount of money exchanged, this cost to the borrower (or revenue to the lender) becomes a proportion or a rate. The interest rate is the price of credit. It represents what the lender needs as compensation for forgoing the opportunity of using its money to increase present consumption, and what the borrower is willing to pay in terms of forgone consumption tomorrow in order to increase money holdings and expenditures today.

Investment grade. [1] A term used to describe bonds suitable for purchase by prudent investors. Standard & Poor's rating service designates the bonds in its four top categories (AAA down to BBB) as investment grade. In their ***fiduciary*** roles, institutional investors, such as pension funds, insurance companies, and banks, must maintain a certain level of credit quality in the bond portfolios they purchase, so they tend to buy mostly investment grade bonds. Any debt issue below investment grade is considered speculative and is often referred to as a ***junk bond***.

Junk bond. [1] A bond with a speculative credit rating of BB or lower by Standard & Poor's and Moody's rating systems. Junk bonds are issued by companies without long track records of sales and earnings, or by those with questionable credit strength. Since junk bonds are more volatile and pay higher ***yields*** than ***investment grade*** bonds, many risk-oriented investors specialize in trading them. Institutions with ***fiduciary*** responsibilities are not supposed to buy junk bonds.

Leveraged buyout (LBO). [1] Takeover of a company, using borrowed funds. Most often, the target company's ***assets*** serve as security for the loans taken out by the acquiring firm, which repays the loans out of ***cash flow*** of the acquired company. Management may use this technique to retain control by converting a company from public to private. A group of investors may also borrow from banks, using their own assets as collateral, to take over

another firm. In almost all leveraged buyouts, public shareholders receive a premium over the current ***market value*** for their shares.

Liability. [2] An obligation to pay an amount or perform a service. A liability appears on the ***balance sheet*** and has a normal credit balance.

[1] Claim on the ***assets*** of a company or individual — excluding ***ownership equity***. Characteristics: 1. It represents a transfer of assets or services at a specified or determinable date. 2. The firm or individual has little or no discretion to avoid the transfer. 3. The event causing the obligation has already occurred.

Liquidation. [1] (1) Dismantling of a business, paying off debts in order of priority, and distributing the remaining ***assets*** in cash to the owners. Involuntary liquidation is covered under Chapter 7 of the Federal ***bankruptcy*** law. (2) Forced sale of a brokerage client's securities or commodities after failure to meet a margin call.

Liquidity. [6] The quality of an ***asset*** that permits it to be converted quickly into cash without a significant loss of value. On an issue-by-issue basis, liquidity refers to the ability of the marketplace to absorb a reasonable amount of buying and selling without excessive price volatility.

[2] The degree to which a company's assets can be readily converted into cash; often related to current obligations. The ***current ratio*** and ***acid-test ratio*** are rough indicators of liquidity.

Long-term debt. [6] (1) A debt instrument with more than 10 years to maturity. (2) In financial statement analysis, long-term debt is variously used. It always means more than one year to maturity in ***balance sheet*** bookkeeping, but analysts may change their usage of long-term to cover bonds of 5 or 7 years, or longer terms. See ***long-term liability***.

Long-term liability. [2] An obligation or debt that is not classified as a ***current liability***; generally a ***liability*** that is not expected to be paid or settled within one year.

Market value. [1] **In general**: market price — the price at which buyers and sellers trade similar items in an open marketplace. In the absence of a market price, it is the estimated highest price a buyer would be warranted in paying and a seller justified in accepting, provided both parties were fully informed and acted intelligently and voluntarily. **Investments**: current market price of a security — as indicated by the latest trade recorded. **Accounting**: technical definition used in valuing inventory or marketable securities in accordance with the conservative accounting principle of "lower of cost or market." While cost is simply acquisition cost, market value is estimated net selling price less estimated costs of carrying, selling, and delivery, and, in the case of an unfinished product, the costs to complete production. The market value arrived at this way cannot, however, be lower than the cost at which a normal profit can be made.

[2] Generally, the price at which an item can be sold. When inventories are valued at "lower of cost or market," market means current cost to replace an item, subject to two limits: it cannot be higher than normal selling price less costs to complete and sell; and it cannot be lower than normal selling price less costs to complete and sell *and* less a normal profit. See also ***fair market value***.

Net present value. [4] The current value at a given interest rate of cash inflow minus outflow, discounted to include lump sums and annuities. This is a common method of evaluating a proposed investment with respect to desired rate of return.

Net worth. [2] The owners' interest in the assets of a company; ***owners' equity***.

Nominal interest rate. An interest rate that has *not* been adjusted for inflation. See ***interest rate***, ***real interest rate***.

Nominal value. See ***face value***, ***par***.

Owners' equity. [2] The interest of the owners of a company in its ***assets***, derived from amounts invested by the owners plus profits retained in the business. Owners' equity is a residual interest and is equal to net assets, or total assets minus total liabilities. Owners' equity appears on the ***balance sheet***; the accounts that make up owners' equity have normal credit balances.

Par [1] Equal to the nominal or ***face value*** of a security. A bond selling at par, for instance, is worth the same dollar amount it was issued for or at which it will be redeemed at maturity — typically, $1,000 per bond.

With ***common stock***, par value is set by the company issuing the stock. At one time, par value represented the original investment behind each share of stock in goods, cash, and services, but today this is rarely the case. Instead, it is an assigned amount (such as $1 a share) used to compute the dollar accounting value of the common shares on a company's balance sheet. Par value has no relation to ***market value***, which is determined by such considerations as net asset value, yield, and investors' expectations of future earnings. Some companies issue no-par value stock.

Par value has more importance for bonds and ***preferred stock***. The interest paid on bonds is based on a percentage of a bond's par value — a 10 percent bond pays 10 percent of the bond's par value annually. Preferred dividends are normally stated as a percentage of the par value of the preferred stock issue.

Preferred stock. [2] A class of stock that carries with it some form of preference over ***common stock***, such as a right to dividends before any are paid on common stock or priority with respect to asset distribution upon ***liquidation*** of the company. On the other hand, voting rights, including the right to elect members of the board of directors, are often restricted to common stock.

Present value. [2] The result of discounting one or more amounts to be received or paid in the future by a discount rate; the amount that must be invested now at a specific interest rate to accumulate to one or more future payments. For example, $100 invested at 6 percent will amount to $106 at the end of one year; therefore the *present value* of $106 due at the end of one year is $100.

Price-earnings (P/E) ratio for common stocks. [8] Why the P/E ratio and the rate of return to common stocks are not simply inverses of each other: Total earnings used in the P/E ratio are accounting values (of which dividends are a part) rather than dividends plus stock-price changes. The P/E ratio therefore represents the current outlook of investors about future prospects, to the extent that prices reflect a long-run outlook, rather than realized gains.

Profit and loss statement. [1] A summary of the revenues, costs, and expenses of a company during an accounting period; also called income statement, operating statement, statement of profit and loss, income and expense statement. Together with the ***balance sheet*** as of the end of the accounting period, it constitutes a company's financial statement.

Quick ratio. See ***acid-test ratio***.

Real interest rate. [1] The current ***interest rate*** minus the inflation rate. The real interest rate may be calculated by comparing interest rates with present or, more frequently, with predicted inflation rates. The real interest rate gives investors in bonds and other fixed-rate instruments a way to see whether their interest will allow them to keep up with or beat the erosion in dollar values caused by inflation. With a bond yielding 10 percent and inflation of 3 percent, for instance, the real interest rate of 7 percent would bring a return high enough to beat inflation. If inflation were at 15 percent, however, the investor would fall behind as prices rose. See ***interest rate***.

Reorganization. [1] Financial restructuring of a firm after it has filed for protection from creditors while it works out a plan to repay its overdue debt. Company reorganizations usually take place under Chapter 11 of the Federal ***bankruptcy*** code under the supervision of a bankruptcy court. The debts of a company in reorganization are usually frozen while a recovery plan is worked out. The aim of reorganization is to return the company to financial health. If the plan does not work, the company may be liquidated and its assets sold to pay off the claims of creditors and shareholders.

[4] A major alteration of the financial structure of a corporation which may take the form of a merger, recapitalization or consolidation.

Replacement cost. [2] The current cost to replace or reproduce an item, taking into account normal quantity produced or purchased, geographic location, possible discounts, transportation charges, changes in production costs, and other relevant factors.

Required rate of return. [4] A benchmark against which an investment's projected return is measured; the proceeds in dividends or appreciation assumed, in financial models, to be required by investors in common stock. Also, the minimum acceptable rate of return used in net-present-value-of-cash-flow calculations to determine if the net value is positive or negative.

SEC (Securities and Exchange Commission). [6] A Federal agency, established by the Securities Exchange Act of 1934 as amended, that has five commissioners appointed by the President with the advice and consent of the Senate of the United States. The powers of the commission include the interpretation, supervision, and enforcement of the securities laws of the United States. The commission has the authority to bring administrative proceedings against firms and persons registered with the SEC, but allegations of criminal violations of the law must be prosecuted by the Department of Justice.

Security. [2] (1) A bond, share of stock, or similar instrument providing an interest or a claim against an enterprise and its resources. (2) Property that is pledged against a debt and that can be claimed by the lender if the borrower does not pay the debt when due.

Shareholders' equity. See owners' equity.

Short-term debt. [6] Debt securities with a relatively short time remaining to maturity. On corporation ***balance sheets***, bonds with one year or less to maturity are listed among ***current liabilities***. In the analysis of corporations or municipalities, bonds with five or less years to maturity remaining are considered short term. The meaning of the term, therefore, depends on the context in which it is used.

Stockholders' equity. See owners' equity.

Working capital. [2] The excess of ***current assets*** over ***current liabilities***; also called net working capital.

Yield. [2] The income earned on an investment during a period of time. For securities such as stocks and bonds the yield is the amount of dividends or interest earned during a year and is often expressed as a percentage of cost or ***market value***.

The following works were consulted in preparing this glossary; for the most part, the material in the glossary is repeated verbatim from one of these sources, or paraphrases material included in one or more of these volumes.

[1] Downes, John and Jordan Elliot Goodman. *Dictionary of finance and investment terms*. Woodbury, New York, Barron's, 1985.

[2] Estes, Ralph. *Dictionary of accounting*, second edition. Cambridge, MA, The MIT Press, 1985.

[3] Logue, Dennis E., ed. *Handbook of modern finance*. Boston, Warren, Gorham & Lamont, 1984.

[4] Mandell, Donnan, ed. *The dealmaker's dictionary of merger and acquisition terminology*. San Diego, Buyout Publications, 1984.

[5] Masulis, Ronald W. *The debt/equity choice*. Cambridge, Mass, Ballinger Pub.Co, 1988. xi, 141 p.

[6] Pessin, Alan H. *Words of Wall Street: 2,000 investment terms defined*. Homewood, Ill., Dow Jones-Irwin, 1983.

[7] ----- and Joseph A. Ross. *More words of Wall Street: 2,000 investment terms defined*. Homewood, Ill., Dow Jones-Irwin, 1986.

[8] Simon, Julian L. Great and almost-great magnitudes in economics. *Journal of economic perspectives*, v. 4, no. 1, Winter 1990. p. 152.